

=> FILE REG

FILE 'REGISTRY' ENTERED ON 24 APR 2009

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=> DISPLAY HISTORY FULL L1-

FILE 'HCAPLUS' ENTERED ON 24 APR 2009

L1 33 SEA SMITS V?/AU

L2 199007 SEA POLYPROPYLENE# OR POLY(A) PROPYLENE#

L3 31562 SEA ISOTACT? OR ISO(A) TACT?

L4 1 SEA L1 AND L2 AND L3

FILE 'REGISTRY' ENTERED ON 24 APR 2009

L5 1 SEA 25085-53-4

L6 1 SEA 130638-44-7

L7 1 SEA 217176-68-6

E 1-PROPENE, HOMOPOLYMER/CN

L8 1 SEA "1-PROPENE, HOMOPOLYMER"/CN

FILE 'HCAPLUS' ENTERED ON 24 APR 2009

L9 25777 SEA L5

L10 1251 SEA L8 (L) (ISOTACT? OR ISO(A) TACT?) 9

L11 413 SEA L6 OR L7

L12 67 SEA L11 AND (L9 OR L10)

FILE 'LREGISTRY' ENTERED ON 24 APR 2009

E PROPYLENE/CN

L13 1 SEA PROPYLENE/CN

D RN

L14 54 SEA 115-07-1/CRN

E ETHYLENE/CN

L15 1 SEA ETHYLENE/CN

D RN

L16 141 SEA 74-85-1/CRN

FILE 'REGISTRY' ENTERED ON 24 APR 2009

L17 21 SEA L14 AND L16 AND 2/NC

L18 1597 SEA ISOTACT?

L19 7 SEA L17 AND L18

FILE 'HCAPLUS' ENTERED ON 24 APR 2009

L20 692 SEA L19

L21 972 SEA L17 (L) (ISOTACT? OR ISO(A) TACT?)

L22 4 SEA L11 AND (L20 OR L21)  
L23 5053 SEA (ROTO? OR ROTAT?) (2A) (MOLD? OR MOULD? OR CAST? OR  
BLOW? OR BLEW? OR INJECT? OR STRETCH?) OR ROTOMOLD? OR  
ROTOMOULD? OR ROTOCAST? OR ROTOBLOW? OR ROTOBLEW? OR  
ROSTRETCH?  
L24 85844 SEA (INJECT? OR STRETCH? OR BLOW? OR BLEW?) (2A) (MOLD? OR  
MOULD? OR CAST?) OR BLOWMOLD? OR BLOWMOULD? OR BLOWCAST?  
L25 1 SEA (L12 OR L22) AND L23  
L26 1 SEA (L12 OR L22) AND L24

FILE 'LREGISTRY' ENTERED ON 24 APR 2009  
L27 STR 130638-44-7

FILE 'REGISTRY' ENTERED ON 24 APR 2009  
L28 50 SEA SSS SAM L27

FILE 'HCAPLUS' ENTERED ON 24 APR 2009  
L29 100490 SEA HOLLOW?  
L30 0 SEA (L12 OR L22) AND L29

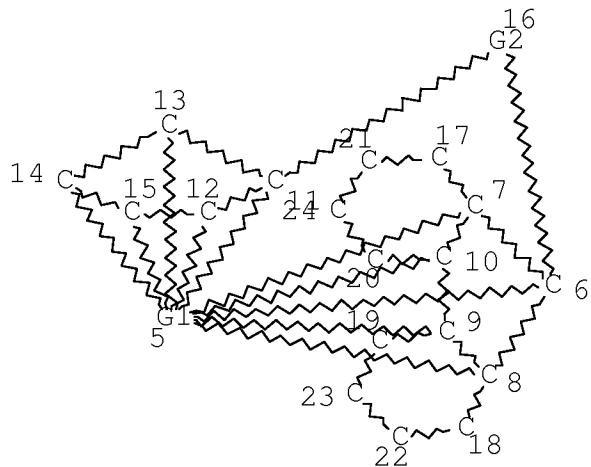
FILE 'REGISTRY' ENTERED ON 24 APR 2009  
L31 1440 SEA SSS FUL L27  
SAV L31 ROG266/A  
L32 10783 SEA (C (L) H)/ELS (L) 2/ELC.SUB AND PMS/CI  
L33 236 SEA L18 AND L32

FILE 'HCAPLUS' ENTERED ON 24 APR 2009  
L34 1461 SEA L31  
L35 27971 SEA L33  
L36 21074 SEA L32 (L) (ISOTACT? OR ISO(A)TACT?)  
L37 243 SEA (L34 OR L11) AND (L9 OR L10 OR L20 OR L21 OR L35 OR  
L36)  
L38 2 SEA L37 AND L23  
L39 12 SEA L37 AND L24  
L40 7677 SEA MFI OR (MELT? OR MOLTEN?) (3A) FLOW? (3A) (INDEX? OR  
INDICE? OR PARAMET? OR VALU? OR NUMBER? OR NUMERIC?)  
L41 2 SEA L40 AND L37  
L42 0 SEA L37 AND L29  
L43 10865 SEA CAVIT? (2A) (MOULD? OR MOLD? OR CAST? OR BLOW? OR  
BLEW? OR INJECT? OR STRETCH?)  
L44 0 SEA L43 AND L37  
L45 0 SEA L37 AND CAVIT?  
L46 19 SEA L22 OR L25 OR L26 OR L38 OR L39 OR L41  
L47 5 SEA L46 AND L12  
L48 19 SEA L46 OR L47  
L49 62 SEA L12 NOT L48  
L50 16 SEA 1808-2004/PY,PRY,AY AND L48

L51 58 SEA 1808-2004/PY, PRY, AY AND L49  
 L52 51 SEA L51 AND 35/SC, SX  
 L53 11 SEA L51 AND 37/SC, SX  
 L54 4 SEA L51 AND 38/SC, SX  
 L55 2 SEA L51 AND 36/SC, SX  
 L56 14 SEA L53 OR L54 OR L55  
 L57 8 SEA L56 AND L52  
 L58 14 SEA L56 OR L57  
 L59 44 SEA L51 NOT L58  
 L60 34663 SEA (POLYPROPYLENE# OR POLY(A)PROPYLENE#) /TI  
 L61 6 SEA L60 AND L59  
 L62 20 SEA L58 OR L61  
 L63 38 SEA L51 NOT L62  
 L64 394 SEA L6  
 L65 23 SEA L7  
 L66 0 SEA L63 AND L64 AND L65  
 L67 34 SEA L63 AND L64  
 L68 4 SEA L63 AND L65  
 L69 24 SEA L62 OR L68  
 L70 34 SEA L51 NOT L69

FILE 'REGISTRY' ENTERED ON 24 APR 2009

=> D L31 QUE STAT  
 L27 STR



VAR G1=TI/HF/ZR  
 REP G2=(1-4) A  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L31 1440 SEA FILE=REGISTRY SSS FUL L27

100.0% PROCESSED 11097 ITERATIONS 1440 ANSWERS  
SEARCH TIME: 00.00.01

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 23:17:20 ON 24 APR 2009  
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=> D L50 1-16 BIB ABS HITSTR HITIND RE

L50 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2005:447050 HCAPLUS Full-text  
DN 142:464835  
TI Reduced cycle time processing of metallocene polypropylene by  
injection-stretch-blow moulding  
resulting in articles with improved properties

IN Smits, Valerie  
PA Total Petrochemicals Research Feluy, Belg.  
SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 1533102	A1	20050525	EP 2003-104212	200311

14

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,

SK

WO 2005046965

A1

20050526

WO 2004-EP52821

200411  
05

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,  
SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, YU, ZA, ZM, ZW  
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,  
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,  
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL,  
PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG

EP 1682329

A1

20060726

EP 2004-818412

200411  
05

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CN 1882431

A

20061220

CN 2004-80033575

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05

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JP 2007511630

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20070510

JP 2006-538849

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KR 2006132614

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KR 2006-711591

200606  
13

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US 20070246866

A1

20071025

US 2007-579266

200703  
05

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PRAI EP 2003-104212

A

20031114 <--

WO 2004-EP52821

W

20041105 <--

AB The use of metallocene-produced polypropylene to prep. single- or multi-layer articles by *injection-stretch-blow molding* with a reduced cycle time is described. The articles have good barrier properties, excellent optical properties, impact, compression and chem. resistance, and rigidity. The finished articles have hot-

filling capability and could be used for food or non-food applications.

IT 25085-53-4

(metallocene catalyzed; reduced cycle time processing of metallocene polypropylene by **injection-stretch-blown molding** resulting in articles with improved impact, chem. resistance, rigidity and excellent optical properties.)

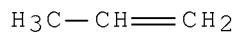
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

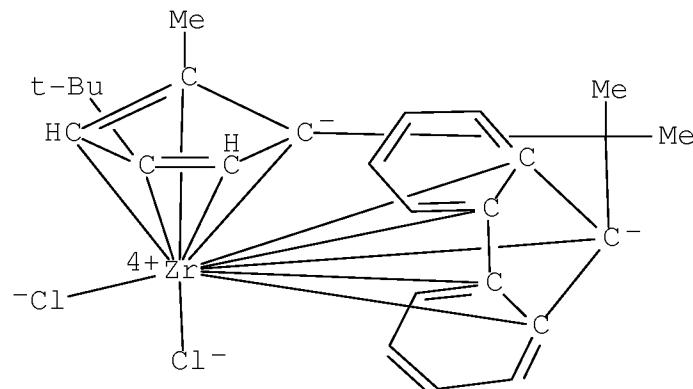


IT 217176-68-6, Isopropylidene-(3-tert-butyl-5-methyl-cyclopentadienyl)(fluorenyl) zirconium dichloride

(reduced cycle time processing of metallocene polypropylene by **injection-stretch-blown molding** resulting in articles with improved impact, chem. resistance, rigidity and excellent optical properties.)

RN 217176-68-6 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



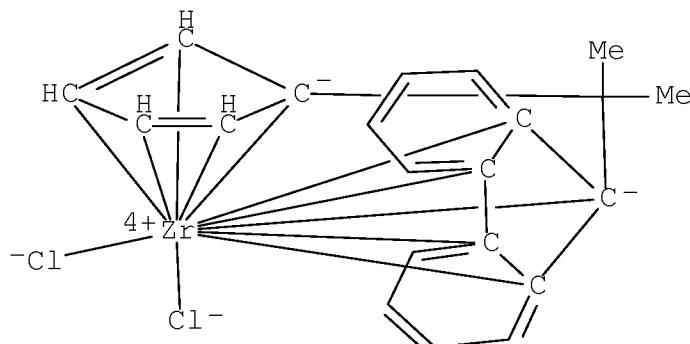
IC ICM B29C049-00  
ICS B29C049-08; B29K023-00  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 37  
ST metallocene ethylene propylene copolymer blend short cycle time  
molding; polypropylene bottle **blow molding**  
improved mech optical property  
IT Food packaging  
(hot-filling; reduced cycle time processing of metallocene  
polypropylene by **injection-stretch-**  
**blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)  
IT Molding of plastics and rubbers  
(injection, stretch, blow; reduced cycle time processing of  
metallocene polypropylene by **injection-stretch**  
**-blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)  
IT Bottles  
Impact strength  
(reduced cycle time processing of metallocene polypropylene by  
**injection-stretch-blow**  
**molding** resulting in articles with improved impact, chem.  
resistance, rigidity and excellent optical properties.)  
IT 25085-53-4  
(metallocene catalyzed; reduced cycle time processing of  
metallocene polypropylene by **injection-stretch**  
**-blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)  
IT 9010-79-1, Ethylene-propylene copolymer  
(metallocene prep'd., random; reduced cycle time processing of  
metallocene polypropylene by **injection-stretch**  
**-blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)  
IT 217176-68-6, Isopropylidene-(3-tert-butyl-5-methyl-  
cyclopentadienyl)(fluorenyl) zirconium dichloride  
(reduced cycle time processing of metallocene polypropylene by  
**injection-stretch-blow mold**  
.ing resulting in articles with improved impact, chem.  
resistance, rigidity and excellent optical properties.)

RE

(1) Anon; PATENT ABSTRACTS OF JAPAN 2003, V2003(09)

(2) Basf Ag; WO 9941293 A 1999 HCPLUS  
 (3) Forte, G; US 2001048988 A1 2001  
 (4) Japan Polychem Corp; JP 2003137245 A 2003 HCPLUS  
 (5) Japan Polychem Corp; JP 2003138074 A 2003 HCPLUS  
 (6) Stevens, J; WO 03040233 A 2003 HCPLUS

L50 ANSWER 2 OF 16 HCPLUS COPYRIGHT 2009 ACS on STN  
 AN 2004:166286 HCPLUS Full-text  
 DN 140:357771  
 TI Stereoblock isotactic-hemiisotactic poly(propylene)s and ethylene/propylene copolymers obtained with ansa-cyclopenta[1,2-b;4,3-b']dithiophene catalysts  
 AU Ewen, John A.; Jones, Robert L.; Elder, Michael J.; Camurati, Isabella; Pritzkow, Hans  
 CS Catalyst Research Corporation, Deerfield Beach, FL, 33442, USA  
 SO Macromolecular Chemistry and Physics (2004), 205(3), 302-307  
 CODEN: MCHPES; ISSN: 1022-1352  
 PB Wiley-VCH Verlag GmbH & Co. KGaA  
 DT Journal  
 LA English  
 AB Stereoblock, isotactic-hemiisotactic poly(propylene) is produced with Cl-sym.  $\text{Me}_2\text{C}(\eta^5\text{-3-(2-adamantyl)-C}_5\text{H}_3)(\eta^5\text{-C}_9\text{H}_4\text{S}_2)\text{ZrCl}_2$ . Ethylene/propylene copolymer. data with the Cs-sym.  $\text{Me}_2\text{C}(\eta^5\text{-C}_5\text{H}_4)(\eta^5\text{-C}_9\text{H}_4\text{S}_2)\text{ZrCl}_2$  metallocene reveals that it is highly propylene-specific and that it produces more random ethylene/propylene copolymers than its fluorenyl analog.  
 IT 130638-44-7  
 (stereoblock isotactic-hemiisotactic poly(propylene)s and ethylene-propylene copolymers prep. with ansa-cyclopenta dithiophene catalysts)  
 RN 130638-44-7 HCPLUS  
 CN Zirconium, dichloro[ $\eta^{10-2,4}$ -cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 9003-07-0P, Polypropylene 9010-79-1P,  
Ethylene-propylene copolymer 25085-53-4P, Isotactic  
polypropylene  
(stereoblock isotactic-hemiisotactic poly(propylene)s  
and ethylene-propylene copolymers prepd. with ansa-cyclopenta  
dithiophene catalysts)

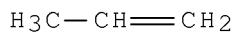
RN 9003-07-0 HCPLUS

CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



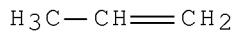
RN 9010-79-1 HCPLUS

CN 1-Propene, polymer with ethene (CA INDEX NAME)

CM 1

CRN 115-07-1

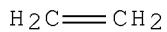
CMF C3 H6



CM 2

CRN 74-85-1

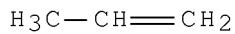
CMF C2 H4



RN 25085-53-4 HCPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
CMF C3 H6



CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 75

IT 130638-44-7 408540-59-0

(stereoblock isotactic-hemiisotactic poly(propylene)s and ethylene-propylene copolymers prepd. with ansa-cyclopenta dithiophene catalysts)

IT 9003-07-0P, Polypropylene 9010-79-1P,

Ethylene-propylene copolymer 25085-53-4P, Isotactic polypropylene 779327-97-8P

(stereoblock isotactic-hemiisotactic poly(propylene)s and ethylene-propylene copolymers prepd. with ansa-cyclopenta dithiophene catalysts)

RE

- (1) Busico, V; Macromolecules 1997, V30, P6251 HCPLUS
- (2) Ewen, J; J Am Chem Soc 1984, V106, P6355 HCPLUS
- (3) Ewen, J; J Am Chem Soc 1987, V109, P6544 HCPLUS
- (4) Ewen, J; J Am Chem Soc 1998, V120, P10786 HCPLUS
- (5) Ewen, J; J Am Chem Soc 2001, V123, P4763 HCPLUS
- (6) Ewen, J; Metalorganic Catalysts for Synthesis and Polymerization 1999, P150
- (7) Ewen, J; Sci Am 1997, V276(5), P60
- (8) Herfert, N; Makromol Chem 1993, V194, P3167 HCPLUS
- (9) Kraak, A; Tetrahedron 1968, V24, P3381 HCPLUS
- (10) Leclerc, M; Angew Chem, Int Ed 1998, V37, P922
- (11) Miller, S; Organometallics 2002, V21, P934 HCPLUS
- (12) Sheldrick, G; SHELXTL V5.1 1998
- (13) Wolfsgruber, W; Makromol Chem 1975, V176, P2765
- (14) Zambelli, A; Macromolecules 1972, V5, P440 HCPLUS
- (15) Zambelli, A; Makromol Chem, Rapid Commun 1991, V12, P523 HCPLUS
- (16) Zambelli, A; NMR -- Basic Principles and Progress 1971, P101 HCPLUS

L50 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2004:139252 HCAPLUS Full-text

DN 140:182439

TI Polyolefin resin compositions and **injection molded** articles, containers, films, and fibers therefrom with high mechanical strength and less flow marks

IN Kawahara, Nobuo; Kojo, Shinichi; Kashiwa, Norio

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 43 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2004051801	A	20040219	JP 2002-211616	20020719

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PRAI JP 2002-211616 20020719 <--

AB The compns. comprise 100 parts of (A) propylene polymers (catalyzed by Mg-supported Ti catalysts or metallocene catalysts) and  $\geq 10$  parts of (B) elastomers with limiting viscosity ( $\eta$ )  $\geq 1.5$  dL/g and Mw/Mn 1.0-3.5 measured by GPC. The elastomers B are (20-80):(20-80) (mol%) X-Y random copolymers [combination of X and Y = (B1) propylene (P) and ethylene (E), (B2) C4-20- $\alpha$ -olefin (OL) and E, or (B3) P and OL, resp.] having heterogeneous linkage (caused by 2,1-insertion of X; measured by  $^{13}\text{C-NMR}$ )  $\leq 1.0$  mol% of total X units, where m.p. of B3 is  $\leq 150^\circ$  or not obsd. Alternatively, the elastomers may be (B4) E-P-OL copolymers with E/OL (20-80):(20-80) (mol%) and (E + P)/OL (20-99):(1-80) (mol%) having both of heterogeneous linkage caused by 2,1-insertion of P and OL  $\leq 1.0$  mol% of total P units and OL units, resp. **Injection molded** articles from the compns. are useful for automotive parts, elec. appliances, medical goods, etc. Thus, isotactic polypropylene [mmmm 95.8%; prep'd. using dimethylmethylen(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride, silica (H 121)-supported methylaluminoxane, and iBu<sub>3</sub>Al] was mixed with 25:75 E-P rubber ( $\eta$  2.2 dL/g, Mw/Mn 2.2, no 2,1-insertion) and **injection molded** to give a sheet showing tensile elongation  $>500\%$ , flexural modulus 1680 MPa, Izod impact strength 55 J/m, and no flow marks.

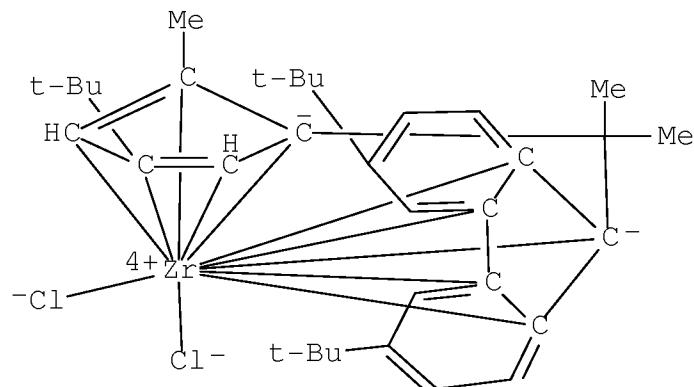
IT 288614-60-8P, Dimethylmethylen(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride

(metallocene polymn. catalysts; propylene polymer/polyolefin

rubber blends for injection molded articles, containers, films, and fibers with high mech. strength and less flow marks)

RN 288614-60-8 HCPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]dichloro- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(metallocene-catalyzed; propylene polymer/polyolefin rubber blends for injection molded articles, containers, films, and fibers with high mech. strength and less flow marks)

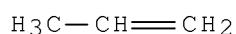
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-16

ICS C08F004-654; C08F297-08

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 39, 40, 76

IT Polyolefin rubber  
(*ethylene-)*propylene- $\alpha$ -olefin; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Aluminoxanes  
(Me, silica-supported, polymn. catalysts.; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Polyolefin rubber  
(alkene-ethylene, C4-20; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Polymer chains  
(configuration; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Polymerization catalysts  
(metallocene; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Automobiles  
(parts; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Containers  
Electric appliances  
Medical goods  
Plastic films  
(propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Ethylene-propylene rubber  
(propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Molded plastics, properties  
Polymer blends  
(propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT Polyolefin fibers  
(propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 7631-86-9, Silica, uses  
(H 121, methylaluminoxane supported with, polymn. catalysts; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 7550-45-0, Titanium tetrachloride, uses  
(catalysts, supported with magnesium chloride; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 9010-79-1P  
(ethylene-propylene rubber, propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 288614-60-8P, Dimethylmethylene(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride  
(metallocene polymn. catalysts; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 25085-53-4P, Isotactic polypropylene  
(metallocene-catalyzed; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 100-99-2, Triisobutylaluminum, uses  
(polymn. catalysts; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 9003-07-0, Polypropylene 9010-79-1, Ethylene-propylene copolymer  
(propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

IT 7786-30-3, Magnesium chloride, uses  
(titanium catalysts supported with; propylene polymer/polyolefin rubber blends for **injection molded** articles, containers, films, and fibers with high mech. strength and less flow marks)

L50 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2003:875323 HCAPLUS Full-text

DN 139:338352

TI Metallocene polypropylene for **rotomolding**

IN Maziers, Eric; Smits, Valerie

PA ATOFINA Research SA, Belg.

SO PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003091295	A1	20031106	WO 2003-EP4234	200304 22
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	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1357137	A1	20031029	EP 2002-76659	200204 26
					<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	AU 2003229720	A1	20031110	AU 2003-229720	200304 22
					<--
	EP 1513885	A1	20050316	EP 2003-722535	200304 22
					<--
	EP 1513885	B1	20061004		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2005523955	T	20050811	JP 2003-587851	200304 22
					<--
	US 20050288472	A1	20051229	US 2005-512389	

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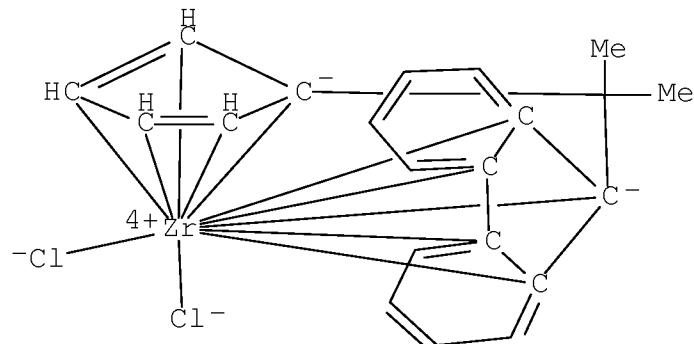
US 7193025	B2	20070320	
PRAI EP 2002-76659	A	20020426	<--
EP 2003-75558	A	20030225	<--
EP 2003-75559	A	20030225	<--
WO 2003-EP4234	W	20030422	<--

AB A single layer articles was prep'd. by **rotomolding** metallocene-produced syndiotactic polypropylene or isotactic random copolymer of propylene. The **rotomolded** articles have a melt flow index of 3-40 g/10min, transmittance >60%, shrink factor <2%, impact strength >4 J/min, and flexural yield strength >12.5 MPa.

IT 130638-44-7 217176-68-6  
(metallocene polypropylene for **rotomolding**)

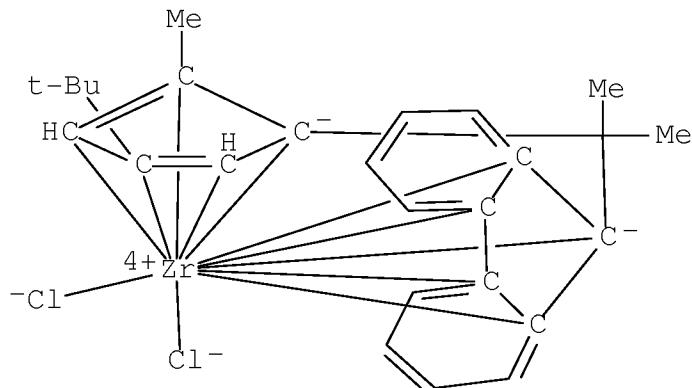
RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



RN 217176-68-6 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]- (9CI) (CA INDEX NAME)



IT 25085-53-4, Isotactic propylene polymer  
 (metallocene polypropylene for rotomolding)

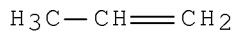
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F010-06

CC 35-3 (Chemistry of Synthetic High Polymers)

ST single layer rotomolded article syndiotactic polypropylene

IT Impact-resistant materials  
 (metallocene polypropylene for rotomolding)

IT Polyolefins

(metallocene polypropylene for rotomolding)

IT Polymerization catalysts

(metallocene; metallocene polypropylene for rotomolding  
 )

IT 130638-44-7 217176-68-6

(metallocene polypropylene for rotomolding)

IT 26063-22-9P, Syndiotactic polypropylene

(metallocene polypropylene for rotomolding)

IT 25085-53-4, Isotactic propylene polymer

(metallocene polypropylene for rotomolding)

RE

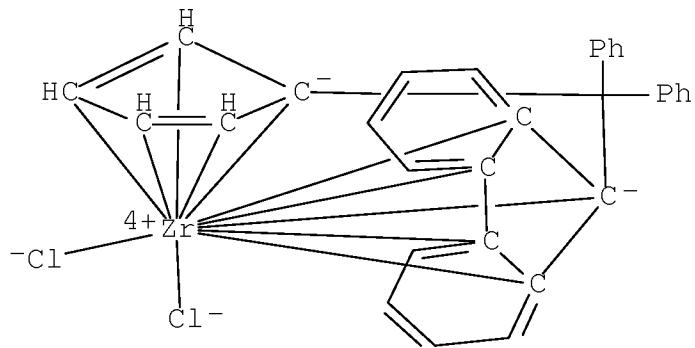
(1) Alastalo, K; WO 0177224 A 2001 HCPLUS  
(2) Sumitomo Chemical Co; EP 0780431 A 1997 HCPLUS

L50 ANSWER 5 OF 16 HCPLUS COPYRIGHT 2009 ACS on STN  
AN 2003:390037 HCPLUS Full-text  
DN 138:386321  
TI Stereoregular propylene polymer compositions for impact-, scratch-, and whitening-resistant materials  
IN Mori, Ryoji; Kizu, Koichi; Kuroiwa, Yoshinori  
PA Mitsui Chemicals Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 14 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003147135	A	20030521	JP 2001-342856	20011108

<--

PRAI JP 2001-342856 20011108 <--  
OS MARPAT 138:386321  
AB The compns. comprise (A) isotactic propylene polymers 30-99.8%, (B) syndiotactic propylene polymers bearing  $\geq$ 90 mol% propylene unit 0.1-40%, (C) (55-90):(10-45) (mol%) syndiotactic propylene-C2-20- $\alpha$ -olefin copolymers 0.1-30% and satisfy B/C ratio 10/90-90/10. Thus, a 70:18:12 mixt. of F 337D (isotactic propylene-1-butene-ethylene copolymer), metallocene-catalyzed syndiotactic polypropylene, and metallocene-catalyzed syndiotactic ethylene-propylene copolymer was injection molded to give a specimen showing tensile modulus 356 MPa, Martens hardness 11 mm-1, no whitening in a 180° bending test.  
IT 132510-07-7, Diphenylmethylene(cyclopentadienyl)fluorenylzirconium dichloride (polymn. catalysts; stereoregular propylene polymer compns. for impact-, scratch-, and whitening-resistant materials)  
RN 132510-07-7 HCPLUS  
CN Zirconium, dichloro[( $\eta$ 5-2,4-cyclopentadien-1-ylidene)(diphenylmethylene][(4a,4b,8a,9a- $\eta$ )-9H-fluoren-9-ylidene]]- (CA INDEX NAME)



IT 89917-24-8, F 337D

(stereoregular propylene polymer compns. for impact-, scratch-, and whitening-resistant materials)

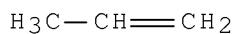
RN 89917-24-8 HCPLUS

CN 1-Butene, polymer with ethene and 1-propene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

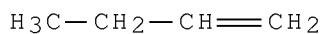
CMF C3 H6



CM 2

CRN 106-98-9

CMF C4 H8



CM 3

CRN 74-85-1

CMF C2 H4



IC ICM C08L023-10  
ICS C08F004-645; C08K003-00; C08L023-08  
CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35  
IT 132510-07-7,  
Diphenylmethylenecyclopentadienyl)fluorenylzirconium dichloride  
136040-19-2, Triphenylcarbenium tetrakis(pentafluorophenyl) borate  
(polymn. catalysts; stereoregular propylene polymer compns. for  
impact-, scratch-, and whitening-resistant materials)  
IT 89917-24-8, F 337D  
(stereoregular propylene polymer compns. for impact-, scratch-,  
and whitening-resistant materials)

L50 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2003:217025 HCAPLUS Full-text  
DN 138:222383  
TI Syndiotactic propylene polymer compositions for polymer modifiers  
and isotactic propylene polymer compositions containing them with  
good impact resistance, hardness, and moldability  
IN Mori, Ryoji; Kizu, Koichi; Kuroiwa, Yoshinori  
PA Mitsui Chemicals Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 36 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003082175	A	20030319	JP 2001-273896	200109 10

<--

PRAI JP 2001-273896 20010910 <--  
OS MARPAT 138:222383  
AB The modifier compns. comprise (A) 5-95 parts syndiotactic propylene  
copolymers comprising 50-99 mol% syndiotactic propylene units and 1-  
50 mol% other repeating units selected from ethylene and C4-20- $\alpha$ -  
olefins and (B) 5-95 parts ethylene- $\alpha$ -olefin copolymers comprising

70-98 mol% ethylene units and 2-30 mol% C3-20- $\alpha$ -olefin units (A + B = 100). The syndiotactic propylene copolymers may be manufd. in the presence of metallocene catalysts. Thus, a compn. comprising metallocene-catalyzed syndiotactic propylene-ethylene copolymer and 1-butene-ethylene copolymer was kneaded with polypropylene and injection- molded to give a test piece showing flexural modulus 1600 MPa, Izod impact strength 70 J/m, and Rockwell hardness 93.

IT 29160-11-0P, Syndiotactic ethylene-propylene copolymer  
(metallocene-catalyzed, modifier contg.; syndiotactic propylene polymer-based modifiers for isotactic propylene polymers with good impact resistance, hardness, and moldability)

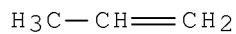
RN 29160-11-0 HCAPLUS

CN 1-Propene, polymer with ethene, syndiotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

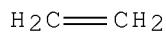
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IT 25087-34-7, 1-Butene-ethylene copolymer  
(modifier contg.; syndiotactic propylene polymer-based modifiers for isotactic propylene polymers with good impact resistance, hardness, and moldability)

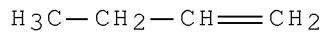
RN 25087-34-7 HCAPLUS

CN 1-Butene, polymer with ethene (CA INDEX NAME)

CM 1

CRN 106-98-9

CMF C4 H8

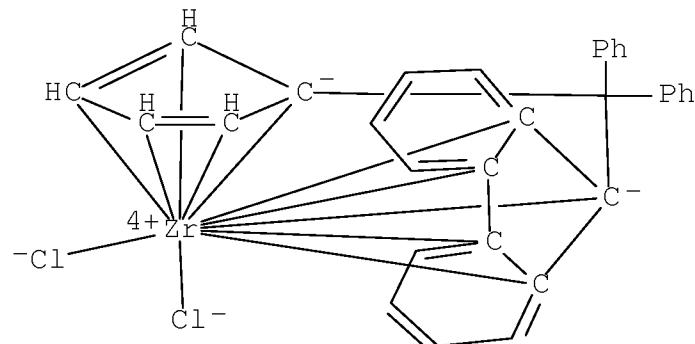


CM 2

CRN 74-85-1  
CMF C2 H4



IT 132510-07-7,  
Diphenylmethylenecyclopentadienylfluorenylzirconium dichloride  
(polymn. catalysts; syndiotactic propylene polymer-based  
modifiers for isotactic propylene polymers with good impact  
resistance, hardness, and moldability)  
RN 132510-07-7 HCPLUS  
CN Zirconium, dichloro[(η<sub>5</sub>-2,4-cyclopentadien-1-  
ylidene)(diphenylmethylene][(4a,4b,8a,9a-η)-9H-fluoren-9-  
ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(syndiotactic propylene polymer-based modifiers for

isotactic propylene polymers with good impact resistance, hardness, and moldability)

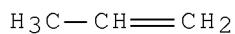
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-10

ICS C08F004-64; C08F210-06; C08L023-16; C08F210-02

CC 37-6 (Plastics Manufacture and Processing)

IT 29160-11-0P, Syndiotactic ethylene-propylene copolymer (metallocene-catalyzed, modifier contg.; syndiotactic propylene polymer-based modifiers for **isotactic** propylene polymers with good impact resistance, hardness, and moldability)

IT 25087-34-7, 1-Butene-ethylene copolymer (modifier contg.; syndiotactic propylene polymer-based modifiers for **isotactic** propylene polymers with good impact resistance, hardness, and moldability)

IT 100-99-2, Triisobutylaluminum, uses 132510-07-7, Diphenylmethylene(cyclopentadienyl)fluorenlyzirconium dichloride 136040-19-2, Triphenylcarbenium tetrakis(pentafluorophenyl)borate (polymn. catalysts; syndiotactic propylene polymer-based modifiers for isotactic propylene polymers with good impact resistance, hardness, and moldability)

IT 25085-53-4, Isotactic polypropylene (syndiotactic propylene polymer-based modifiers for **isotactic** propylene polymers with good impact resistance, hardness, and moldability)

L50 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:736328 HCAPLUS Full-text

DN 137:264029

TI Automotive parts made of polypropylene resin composition

IN Kawai, Koji; Yamashita, Masahiro; Tohi, Yasushi; Itakura, Keita; Sakai, Ikunori; Hashimoto, Mikio; Minoda, Takeshi; Naito, Masamichi; Takaoka, Toru; Kawahara, Nobuo; Kaneyoshi, Hiromu

PA Mitsui Chemicals, Inc., Japan; Grand Polymer Co., Ltd.

SO PCT Int. Appl., 78 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002074855	A1	20020926	WO 2002-JP2186	20020308
				<--	
	W: CN, JP, KR, US				
	RW: DE, FR, GB				
EP	1302508	A1	20030416	EP 2002-703946	20020308
				<--	
EP	1302508	B1	20060517		
	R: DE, FR, GB				
CN	1200034	C	20050504	CN 2002-800709	20020308
				<--	
TW	257407	B	20060701	TW 2002-91104785	20020314
				<--	
US	20030187121	A1	20031002	US 2002-275903	20021112
				<--	
US	7081493	B2	20060725		
US	20060194914	A1	20060831	US 2006-411093	20060426
				<--	
PRAI	JP 2001-74880	A	20010315	<--	
	JP 2001-74884	A	20010315	<--	
	WO 2002-JP2186	W	20020308	<--	
	US 2002-275903	A1	20021112	<--	
AB	An automotive part is made of a polypropylene resin compn. which comprises (A1) a propylene homopolymer, (B) an elastomer, and (C) an inorg. filler or which comprises (A2) a propylene block copolymer and (C) an inorg. filler and optionally contains (B) an elastomer, wherein the propylene homopolymer (A1) and the propylene homopolymer of the propylene block copolymer (A2) have a melt flow rate of 20-300 g/10 min, a proportion of irregularly positioned propylene monomer				

units based on 2,1- or 1,3-insertion in all structural propylene units, as detd. from a  $^{13}\text{C}$ -NMR spectrum, being 0.2% or lower, and a ratio of wt.-av. mol. wt. to no.-av. mol. wt. being 1-3. The automotive part can be efficiently produced by **injection molding**.

IT 25085-53-4P 115404-65-4P

(automotive parts made of polypropylene resin compn.)

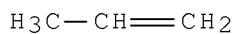
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



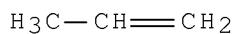
RN 115404-65-4 HCPLUS

CN 1-Propene, polymer with ethene, isotactic, block (CA INDEX NAME)

CM 1

CRN 115-07-1

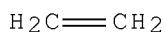
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4

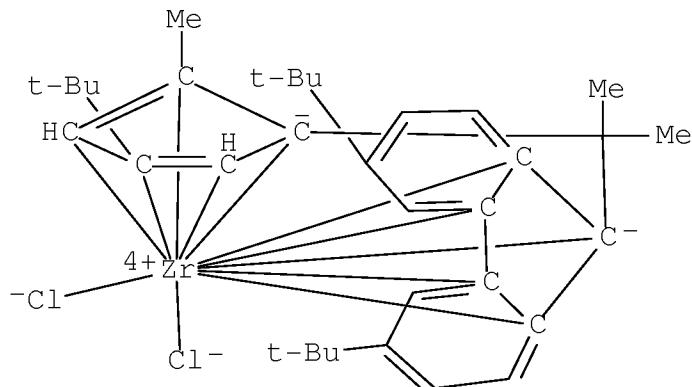


IT 288614-60-8P

(prepn. of polypropylene resin compn. for automobile parts)

RN 288614-60-8 HCPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]dichloro- (CA INDEX NAME)



IC ICM C08L023-10

ICS C08K003-00

CC 38-3 (Plastics Fabrication and Uses)

IT 25085-53-4P 115404-65-4P

(automotive parts made of polypropylene resin compn.)

IT 288614-60-8P

(prepn. of polypropylene resin compn. for automobile parts)

RE

- (1) Japan Polychem Corp; JP 11228759 A 1999 HCPLUS
- (2) Japan Polychem Corp; JP 11302471 A 1999 HCPLUS
- (3) Japan Polyolefins Co Ltd; JP 10212311 A 1998 HCPLUS
- (4) Mitsubishi Chemical Corp; JP 11171925 A 1999 HCPLUS
- (5) Mitsui Chemicals Ltd; JP 101573 A 1998
- (6) Sumitomo Chemical Co Ltd; DE 19927477 A1 1999 HCPLUS
- (7) Sumitomo Chemical Co Ltd; JP 2000838 A 1999
- (8) Ube Industries Ltd; JP 09124736 A 1997 HCPLUS
- (9) Ube Industries Ltd; JP 09165479 A 1997 HCPLUS
- (10) Ube Industries Ltd; CA 2184523 A 1997 HCPLUS
- (11) Ube Industries Ltd; US 5856400 A 1997 HCPLUS
- (12) Ube Industries Ltd; AU 9664359 A 1997 HCPLUS

L50 ANSWER 8 OF 16 HCPLUS COPYRIGHT 2009 ACS on STN

AN 2002:728945 HCPLUS Full-text

DN 137:248781

TI Heat-resistant rigid transparent propylene polymer containers

IN Wada, Isao

PA Grand Polymer K. K., Japan; Mitsui Chemicals Inc.

SO Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002275330	A	20020925	JP 2001-74626	20010315

<--

PRAI JP 3662502 B2 20050622  
JP 2001-74626 20010315 <--

OS MARPAT 137:248781

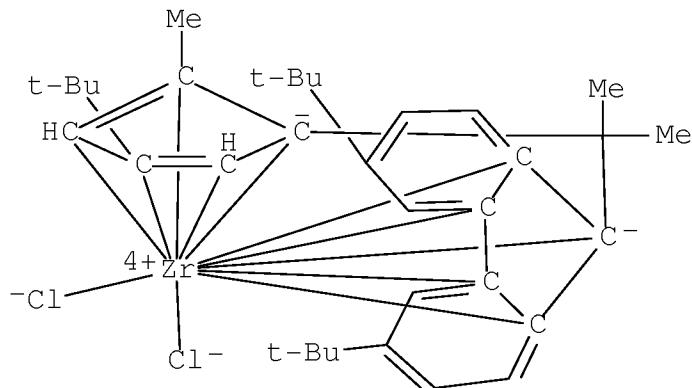
AB The containers are formed by **stretch blow molding** of resin compns. contg. 99.5-99.95% metallocene-catalyzed propylene- $\alpha$ -olefin random copolymers having melt flow rate (MFR; ASTM D 1238, 230°, 2.16 kg load) 0.5-50 g/10 min,  $\alpha$ -olefin content 0.5-5%, content of regioirregular units (based on 2,1- or 1,3-insertions, detd. from  $^{13}\text{C}$ -NMR spectra)  $\leq$ 0.2%, and Mw/Mn (detd. by GPC) 2.5-4, and 0.05-0.5% crystal nucleating agents. Thus, propylene was copolymerd. with ethylene in the presence of H, dimethylmethylen(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert- butylfluorenyl)zirconium dichloride (prepn. given),  $\text{SiO}_2$ -supported methylaluminoxane, and (iso-Bu)<sub>3</sub>Al to give propylene-ethylene random copolymer (A) showing  $T_m$  149°, MFR 30 g/10 min, Mw/Mn 2.1, ethylene content 1.3 mol%, n-decane-sol. fraction 0.3%, isotactic pentad (mmmm) fraction 95.0%, 2,1-insertions 0.02%, and 1,3-insertions 0.09% and copolymer (B) showing MFR 12 g/10 min. A mixt. of 100 parts compn. (Mw/Mn 2.9) contg. the copolymers A and B and 0.1 part hydroxyaluminum bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate] was pelletized and **stretch-blow-molded** to give a bottle showing flexural rigidity 1220 MPa, haze 10%, and dimensional change after heating of 0.05 mm.

IT 288614-60-8P

(catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

RN 288614-60-8 HCPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]dichloro- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene copolymer

(stretch blow-molded heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

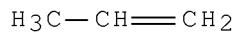
RN 56453-76-0 HCPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

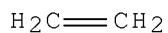
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM C08L023-14

ICS B29C049-08; B65D001-09; C08F004-62; C08K005-521; B29K023-00;

B29L022-00

CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 29, 35, 37

IT Aluminoxanes  
(Me, silica-supported, catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT Containers  
(heat-resistant, transparent; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT Polymerization catalysts  
(metallocene; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT Bottles  
Crystal nucleating agents  
(**stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT Polymer blends  
(**stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT Molding of plastics and rubbers  
(**stretch, blow; stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT 100-99-2, Triisobutylaluminum, uses  
(catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT 288614-60-8P  
(catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT 19099-48-0P, 4,4'-Di-tert-butyldiphenylmethane 58775-07-8P,  
3,6-Di-tert-butylfluorene 106112-39-4P,  
2,2'-Diiodo-4,4'-di-tert-butyldiphenylmethane 150295-91-3P,  
1-tert-Butyl-3-methylcyclopentadiene 288614-69-7P 334696-50-3P  
(in prepn. of metallocene catalyst; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

IT 67-64-1, Acetone, reactions 101-81-5, Diphenylmethane 128-37-0,  
2,6-Di-tert-butyl-4-methylphenol, reactions 677-22-5,  
tert-Butylmagnesium chloride 134014-04-3  
(in prepn. of metallocene catalyst; **stretch**

blow-molded heat-resistant rigid transparent  
 containers from metallocene-catalyzed propylene polymer compns.)  
 IT 438238-46-1, Hydroxyaluminum  
 bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate]  
 (nucleating agent; stretch blow-  
 molded heat-resistant rigid transparent containers from  
 metallocene-catalyzed propylene polymer compns.)  
 IT 56453-76-0P, Isotactic ethylene-propylene  
 copolymer  
 (stretch blow-molded heat-resistant  
 rigid transparent containers from metallocene-catalyzed propylene  
 polymer compns.)  
  
 L50 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2002:728943 HCAPLUS Full-text  
 DN 137:248456  
 TI Propylene polymer compositions containing metallocene-catalyzed  
 polymers with good moldability, impact resistance, and elongation  
 IN Kawai, Koji; Yamashita, Masahiro; Kawahara, Nobuo; Doi, Yasushi;  
 Kaneyoshi, Hiromu; Mori, Ryoji  
 PA Mitsui Chemicals Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 93 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002275325	A	20020925	JP 2001-74953	200103 15

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PRAI JP 2001-74953 20010315 <--  
 AB The compns. contain metallocene-catalyzed propylene(- $\alpha$ -olefin)  
 (homo)polymers (A1) and propylene(- $\alpha$ -olefin) (homo)polymers (A2) both  
 of which satisfy (a)  $\alpha$ -olefin content  $\leq$  10 mol%, (b) melt-flow rate  
 (MFR; at 230° and 2.16 kg load) 0.01-1000 g/10 min, MFR ratio of A1  
 to A2  $\geq$  10, and (c) propylene monomer heterocoupling content based on  
 2,1-insertion and that based on 1,3-insertion both  $\leq$  0.2% (obsd. by  
 $^{13}\text{C-NMR}$ ). Another compns. contain A1, elastomers (C), polyolefins (D)  
 with ethylene, butene, or 4-methyl-1-pentene monomer unit  $\geq$  90 mol%,  
 or polyolefins (E) graft modified with acidic monomers. Another  
 compns. contain block copolymers (B) having propylene homopolymer or  
 $\leq$  10 mol%  $\alpha$ -olefin random copolymer units and metallocene-catalyzed  
 amorphous polyolefin units, with MFR 0.01-1000 g/10 min and propylene

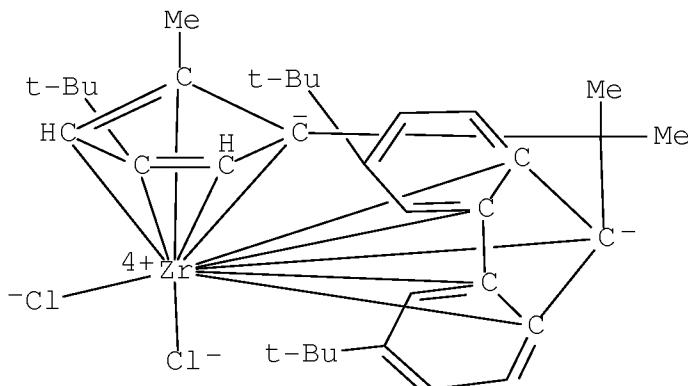
monomer heterocoupling content based on 2,1-insertion and that based on 1,3-insertion both  $\leq 0.2\%$  (obsd. by  $^{13}\text{C}$ -NMR), optionally contg. C, D, and E. Thus, 40:60 polypropylene blend [both prep'd. in the presence of dimethylmethylen(3-tert-butyl-5-methylcyclopentadienyl) (3,6-di-tert-butylfluoren-9-ylidene)zirconium dichloride, Me aluminoxane supported with silica, and  $\text{Al(iso-Bu)}_3$  by 2-step polymn.] with MFR 50 and 60 g/10 min,  $\text{Mw/Mn}$  3.3 and 2.1, and mmmm both 95.8% was kneaded and injection-molded to give a test piece with flexural modulus 2100 MPa, Izod impact strength 20 J/m, and heat distortion temp.  $140^\circ$ .

IT 288614-60-8

(polymn. catalyst; propylene polymer compns. contg. metallocene-catalyzed stereoregular polymers with good moldability, impact resistance, and elongation)

RN 288614-60-8 HCAPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]dichloro- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
56453-76-0P, Isotactic ethylene-propylene copolymer

(propylene polymer compns. contg. metallocene-catalyzed stereoregular polymers with good moldability, impact resistance, and elongation)

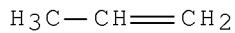
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



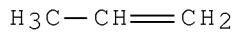
RN 56453-76-0 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

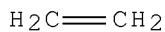
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM C08L023-10

ICS C08L023-04; C08L023-18; C08L023-26; C08L053-00; C08L101-00

CC 37-6 (Plastics Manufacture and Processing)

IT 288614-60-8

(polymn. catalyst; propylene polymer compns. contg.

metallocene-catalyzed stereoregular polymers with good  
moldability, impact resistance, and elongation)

IT 25085-53-4P, Isotactic polypropylene

56453-76-0P, Isotactic ethylene-propylene

copolymer 106565-43-9P, Ethylene-propylene block copolymer

(propylene polymer compns. contg. metallocene-catalyzed  
stereoregular polymers with good moldability, impact resistance,  
and elongation)

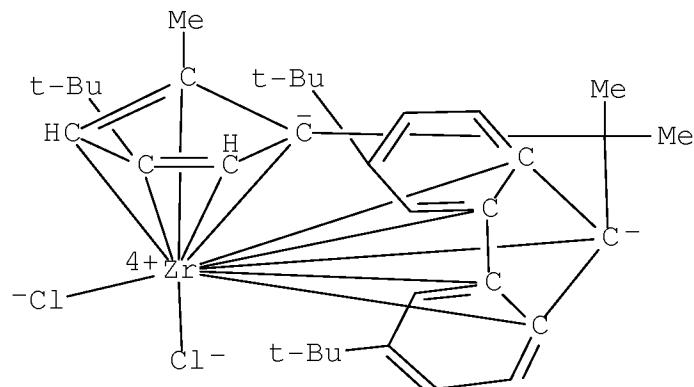
L50 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2002:727219 HCAPLUS Full-text  
 DN 137:248736  
 TI Propylene polymer compositions and their use for impact-resistant  
 transparent rigid containers and medical goods  
 IN Kawai, Koji; Wada, Isao  
 PA Mitsui Chemicals Inc., Japan; Grand Polymer K. K.  
 SO Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002275332	A	20020925	JP 2001-74883	200103 15
PRAI	JP 3672500	B2	20050720	<--	
OS	JP 2001-74883		20010315	<--	
AB	The compns., useful for containers and medical goods suitable for electron-beam or $\gamma$ -ray sterilization, contain 100 parts mixts. of 70- 98% metallocene-catalyzed propylene- $\alpha$ -olefin random copolymers having melt flow rate (MFR; ASTM D 1238, 230°, 2.16 kg load) 5-80 g/10 min, $\alpha$ -olefin content 0.5-5%, content of regioirregular units (based on 2,1- or 1,3-insertions, detd. from $^{13}\text{C}$ -NMR spectra) $\leq$ 0.2%, and Mw/Mn (detd. by GPC) 1-3 and 2-30% ethylene-C4-20 $\alpha$ -olefin copolymers having MFR (190°, 2.16 kg load) 0.5-40 g/10 min and d. (ASTM D 1505) 0.86-0.92 g/cm <sup>3</sup> , and 0.05-0.5 part crystal nucleating agents. Thus, propylene was copolymd. with ethylene in the presence of H, dimethylmethylen(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert- butylfluorenyl)zirconium dichloride (prepn. given), $\text{SiO}_2$ -supported methylaluminoxane, and (iso-Bu) <sub>3</sub> Al to give propylene-ethylene random copolymer showing $T_m$ 149°, MFR 30 g/10 min, Mw/Mn 2.1, ethylene content 1.3 mol%, n-decane-sol. fraction 0.3%, isotactic pentad (mmmm) fraction 95.0%, 2,1-insertions 0.02%, and 1,3-insertions 0.09%, 84.2 parts of which was pelletized with metallocene-catalyzed ethylene-1-octene copolymer 15.8, hydroxyaluminum bis[2,2- methylenebis(4,6-di-tert-butylphenyl) phosphate] 0.2 part, and other additives and <b>injection-molded</b> to give test pieces showing elongation at break 376%, flexural rigidity 1670 MPa, haze 40%, and good impact resistance.				
IT	288614-60-8P				

(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant rigid transparent containers and medical goods)

RN 288614-60-8 HCPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]dichloro- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene copolymer

(metallocene-catalyzed propylene polymer compns. for impact-resistant rigid transparent containers and medical goods)

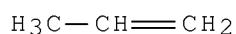
RN 56453-76-0 HCPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM C08L023-14  
ICS C08F004-642; C08F210-06; C08K005-00; C08L023-14; C08L023-08  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 29, 35, 37, 63  
IT 288614-60-8P  
(catalyst component; metallocene-catalyzed propylene polymer  
compns. for impact-resistant rigid transparent containers and  
medical goods)  
IT 56453-76-0P, Isotactic ethylene-propylene  
copolymer  
(metallocene-catalyzed propylene polymer compns. for  
impact-resistant rigid transparent containers and medical goods)

L50 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2002:727218 HCAPLUS Full-text  
DN 137:248735  
TI Propylene polymer compositions and their use for impact-resistant  
transparent thick **injection moldings**  
IN Kawai, Koji; Wada, Isao  
PA Mitsui Chemicals Inc., Japan; Grand Polymer K. K.  
SO Jpn. Kokai Tokkyo Koho, 20 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002275331	A	20020925	JP 2001-74882	200103 15
	JP 3672499	B2	20050720		<--
PRAI	JP 2001-74882		20010315	<--	
OS	MARPAT 137:248735				
AB	The compns., useful for thick <b>injection moldings</b> such as toothbrush handles and battery containers, contain 100 parts metallocene- catalyzed propylene- $\alpha$ -olefin random copolymers having melt flow rate (MFR; ASTM D 1238, 230°, 2.16 kg load) 8-80 g/10 min, $\alpha$ -olefin content 0.5-5.0%, content of regioirregular units (based on 2,1- or				

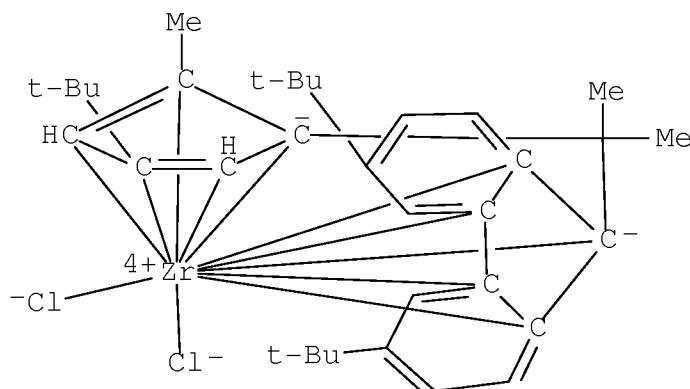
1,3-insertions, detd. from  $^{13}\text{C}$ -NMR spectra)  $\leq 0.2\%$ , and  $M_w/M_n$  (detd. by GPC) 1-3.5, and 0.05-0.5 part crystal nucleating agents. Thus, propylene was copolymerd. with ethylene in the presence of H, dimethylmethylen(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride (prepn. given),  $\text{SiO}_2$ -supported methylaluminoxane, and  $(\text{iso-Bu})_3\text{Al}$  to give propylene-ethylene random copolymer showing  $T_m$  149°, MFR 30 g/10 min,  $M_w/M_n$  2.1, ethylene content 1.3 mol%, n-decane-sol. fraction 0.3%, isotactic pentad (mmmm) fraction 95.0%, 2,1-insertions 0.02%, and 1,3-insertions 0.09%, 100 parts of which was pelletized with 0.3 part hydroxylaluminum bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate] and other additives and injection-molded to give test pieces showing elongation at break 700%, flexural rigidity 1580 MPa, haze 22%, and no voids.

IT 288614-60-8P

(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

RN 288614-60-8 HCPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]dichloro- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene copolymer

(metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

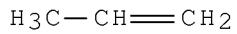
RN 56453-76-0 HCPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

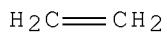
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM C08L023-14  
ICS C08F004-642; C08F210-06; C08K005-00  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 29, 35, 37, 52, 63  
ST isotactic propylene ethylene copolymer metallocene catalyst;  
transparency rigidity propylene polymer metallocene catalyst; impact  
resistance propylene polymer metallocene catalyst; nucleating agent  
phosphate propylene polymer container; injection  
molding toothbrush propylene polymer metallocene; battery  
container propylene polymer metallocene catalyst  
IT Aluminoxanes  
(Me, silica-supported, catalyst component; metallocene-catalyzed  
propylene polymer compns. for impact-resistant transparent thick  
injection moldings)  
IT Primary batteries  
(containers; metallocene-catalyzed propylene polymer compns. for  
impact-resistant transparent thick injection  
moldings)  
IT Transparent materials  
(impact-resistant; metallocene-catalyzed propylene polymer  
compns. for impact-resistant transparent thick injection  
moldings)  
IT Crystal nucleating agents  
(metallocene-catalyzed propylene polymer compns. for

IT impact-resistant transparent thick injection moldings)

IT Polymerization catalysts  
(metallocene; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT Brushes  
Dental materials and appliances  
(toothbrushes, handles; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT Containers  
(transparent, for batteries; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT Impact-resistant materials  
(transparent; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 100-99-2, Triisobutylaluminum, uses  
(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 288614-60-8P  
(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 19099-48-0P, 4,4'-Di-tert-butyldiphenylmethane 58775-07-8P,  
3,6-Di-tert-butylfluorene 106112-39-4P,  
2,2'-Diiodo-4,4'-di-tert-butyldiphenylmethane 150295-91-3P,  
1-tert-Butyl-3-methylcyclopentadiene 288614-69-7P 334696-50-3P  
(in prepn. of metallocene catalyst; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 67-64-1, Acetone, reactions 101-81-5, Diphenylmethane 128-37-0,  
2,6-Di-tert-butyl-4-methylphenol, reactions 677-22-5,  
tert-Butylmagnesium chloride 134014-04-3  
(in prepn. of metallocene catalyst; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 56453-76-0P, Isotactic ethylene-propylene copolymer  
(metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 438238-46-1, Hydroxyaluminum bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate]

(nucleating agent; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick **injection moldings**)

L50 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:671960 HCAPLUS Full-text

DN 137:186448

TI Metallocene catalyst-based ethylene polymer compositions for **rotomolding**

IN Follestad, Arild; Ommundsen, Espen; Fosse, Knut

PA Borealis Technology Oy, Finland

SO Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI EP 1236770 A1 20020904 EP 2001-301873

200103  
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EP 1236770 B1 20060607

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

AT 328959 T 20060615 AT 2001-301873

200103  
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EP 1683834 A2 20060726 EP 2006-6357

200103  
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EP 1683834 A3 20060913

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

ES 2260172 T3 20061101 ES 2001-301873

200103  
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WO 2002070602 A2 20020912 WO 2002-GB904

200203  
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WO 2002070602 A3 20021219

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,

CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
 NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,  
 TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI,  
 FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 AU 2002237397 A1 20020919 AU 2002-237397 200203  
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 CN 1505657 A 20040616 CN 2002-809141 200203  
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 CN 1263796 C 20060712  
 US 20040116608 A1 20040617 US 2004-469601 200401  
 13  
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 US 7332543 B2 20080219  
 US 20090004417 A1 20090101 US 2007-4059 200712  
 20  
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 PRAI EP 2001-301873 A 20010301 <--  
 WO 2002-GB904 W 20020301 <--  
 US 2004-469601 A3 20040113 <--  
 AB A polymer compn. suitable for **rotomolding** comprises: (I) an ethylene homopolymer or copolymer with at least one other C3-10  $\alpha$ -olefin, having a melt flow rate of 0.5 to 30, Mw/Mn of less than 4, an Mw of 50,000 to 110,000, a d. of 0.940-0.970 and a m.p. of 100 to 145°; or (II) a propylene homopolymer or copolymer with at least one other C2-10  $\alpha$ -olefin, having a melt flow rate of 0.5 to 30, Mw/Mn of less than 4, an Mw of 150,000 to 300,000, and a m.p. of 100 to 170°; and (III) an ethylene homo or copolymer with at least one other C3-10  $\alpha$ -olefin, having a melt flow rate of within 40% of the melt flow rate of component (I), Mw/Mn of less than 4, an Mw of within 30% of the Mw of component (I), a d. of 0.880-0.940, said d. being at least 0.010 g/cm<sup>3</sup> less than the d. of component (I) and a m.p. of at least 5° less than that of component (I); or (IV) a propylene homo or copolymer with at least one other C2-10  $\alpha$ -olefin having a melt flow rate of within 40% of the melt flow rate of component (I), Mw/Mn of less than 4, an Mw of within 30% of the Mw of component (I), and a m.p. of at least 10° less than that of component (I). A compn.

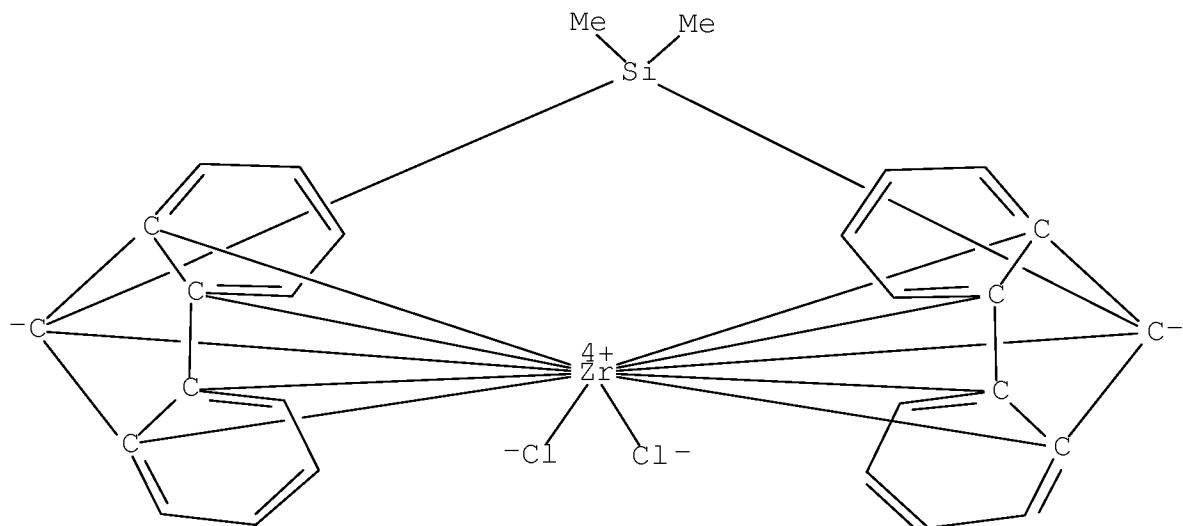
contained an ethylene homopolymer prep'd. using a single site catalyst and an ethylene-hexene copolymer.

IT 148799-45-5

(metallocene catalyst-based ethylene polymer compns. for rotomolding)

RN 148799-45-5 HCPLUS

CN Zirconium, dichloro[(dimethylsilylene)bis[(4a,4b,8a,9,9a-η)-9H-fluoren-9-ylidene]]- (9CI) (CA INDEX NAME)



IT 25085-53-4P, isotactic polypropylene

(metallocene catalyst-based ethylene polymer compns. for rotomolding)

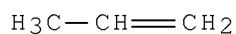
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-10

ICS C08L023-16

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35  
ST metallocene catalyst based ethylene polymer compn  
rotomolding  
IT Aluminoxanes  
    (Me; metallocene catalyst-based ethylene polymer compns. for  
    rotomolding)  
IT Polymer blends  
    (metallocene catalyst-based ethylene polymer compns. for  
    rotomolding)  
IT Polymerization catalysts  
    (metallocene; metallocene catalyst-based ethylene polymer compns.  
    for rotomolding)  
IT Molding of plastics and rubbers  
    (rotational; metallocene catalyst-based ethylene polymer compns.  
    for rotomolding)  
IT 73364-10-0, Bis(butylcyclopentadienyl)dichlorozirconium  
143278-86-8, Rac-dimethylsilylenebis(2-methylindenylzirconium  
dichloride 148799-45-5  
    (metallocene catalyst-based ethylene polymer compns. for  
    rotomolding)  
IT 9002-88-4P, Ethylene homopolymer 9003-07-0P 25085-53-4P,  
Isotactic polypropylene 25213-02-9P, Ethylene-hexene  
copolymer  
    (metallocene catalyst-based ethylene polymer compns. for  
    rotomolding)  
IT 25087-34-7, ME8152  
    (metallocene catalyst-based ethylene polymer compns. for  
    rotomolding)

RE

- (1) Courtenay, J; AU 2128099 A 1999
- (2) Mitsui; JP 07309909 A 1995 HCPLUS
- (3) Steve, C; US 6111023 A 2000 HCPLUS

L50 ANSWER 13 OF 16 HCPLUS COPYRIGHT 2009 ACS on STN

AN 2001:283966 HCPLUS Full-text

DN 134:296247

TI Metallocene compounds as olefin polymerization catalysts and  
manufacture of metallocene catalysts and polyolefins

IN Kawai, Koji; Yamashita, Masahiro; Tohi, Yasushi; Kawahara, Nobuo;  
Michiue, Kenji; Kaneyoshi, Hiromu; Mori, Ryoji

PA Mitsui Chemicals, Inc., Japan

SO PCT Int. Appl., 352 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

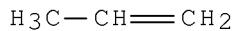
PATENT NO.		KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2001027124	A1	20010419	WO 2000-JP6945	200010 05
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	W: CN, JP, KR, SG, US				
	RW: BE, DE, FR, GB, IT, NL				
EP	1138687	A1	20011004	EP 2000-964684	200010 05
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EP	1138687	B1	20070411		
	R: BE, DE, FR, GB, IT, NL				
CN	100434433	C	20081119	CN 2000-802165	200010 05
				<--	
TW	267521	B	20061201	TW 2000-89120991	200010 07
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KR	746676	B1	20070806	KR 2001-707111	200106 07
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US	6939928	B1	20050906	US 2001-857687	200106 08
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US	20050228155	A1	20051013	US 2005-54597	200502 10
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US	7449533	B2	20081111		
KR	2007022353	A	20070226	KR 2006-727528	200612 28
				<--	
PRAI	KR 786742	B1	20071218		
	JP 1999-288838	A	19991008	<--	
	JP 1999-288839	A	19991008	<--	
	JP 1999-288840	A	19991008	<--	
	JP 2000-250387	A	20000821	<--	
	JP 2000-250390	A	20000821	<--	
	JP 2000-250391	A	20000821	<--	

WO 2000-JP6945 W 20001005 <--  
KR 2001-707111 A3 20010607 <--  
US 2001-857687 A3 20010608 <--  
OS MARPAT 134:296247  
AB A metallocene compd., for use as an olefin polymn. catalyst for providing isotactic polymers, has a substituted cyclopentadienyl and a (substituted) fluorenyl ligands which have been bridged with a hydrocarbon group. A process for producing the metallocene compd. is intended to selectively produce the specific metallocene compd. while avoiding the generation of an isomer by synthesizing isomer-free intermediates. Polyolefin produced by using a catalytic system including the metallocene compd. is excellent in impact resistance and transparency and has isotacticity >85%.  
IT 25085-53-4P 56453-76-0P, Ethylene propylene copolymer, **isotactic**  
(manuf. of polyolefins using metallocene compds. as olefin polymn. catalysts)  
RN 25085-53-4 HCPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

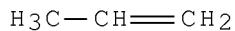


RN 56453-76-0 HCPLUS  
CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CM 2

CRN 74-85-1  
CMF C2 H4

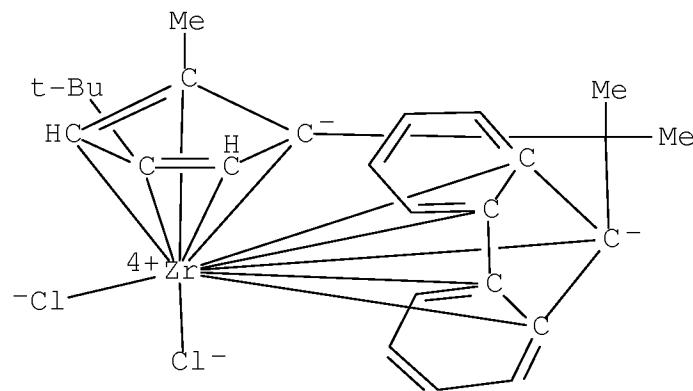
H<sub>2</sub>C=CH<sub>2</sub>

IT 217176-68-6P

(prepn. of metallocene compds. as olefin polymn. catalysts)

RN 217176-68-6 HCPLUS

CN Zirconium, dichloro[η<sub>10</sub>-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IC ICM C07F017-00

ICS C08F004-64; C08F010-00; C07F007-00; C07F007-08

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29

IT 9003-07-0P, Polypropylene 9010-79-1P, Ethylene-propylene copolymer

25085-53-4P 29160-13-2P, 1-Butene-propylene copolymer

56453-76-0P, Ethylene propylene copolymer, *isotactic*

(manuf. of polyolefins using metallocene compds. as olefin polymn. catalysts)

IT 217176-68-6P 288614-60-8P 288614-62-0P 288614-63-1P

288614-64-2P 334696-51-4P 334696-54-7P 334696-56-9P

334696-58-1P 334696-60-5P 334696-62-7P 334696-65-0P

334696-69-4P 334696-73-0P 334696-78-5P 334696-82-1P

334696-84-3P 334696-87-6P 334696-91-2P 334696-94-5P

334697-01-7P 334697-04-0P 334697-07-3P

(prepn. of metallocene compds. as olefin polymn. catalysts)

RE

- (1) Alt; J Organomet Chem 1998, V568(1-2), P87 HCPLUS
- (2) Fina Research S A; WO 200049056 A1
- (3) Fina Research S A; JP 200053724 A
- (4) Fina Research S A; EP 881236 A1 HCPLUS
- (5) Fina Research S A; EP 965603 A1 HCPLUS
- (6) Fina Research S A; WO 9854230 A1 1998 HCPLUS
- (7) Fina Research S A; WO 9967309 A1 1999 HCPLUS
- (8) Fina Research S A; WO 0049029 A1 2000 HCPLUS
- (9) Phillips Petroleum Company; EP 1023298 A1 HCPLUS
- (10) Phillips Petroleum Company; US 5886202 A HCPLUS
- (11) Phillips Petroleum Company; WO 9914219 A1 1999 HCPLUS

L50 ANSWER 14 OF 16 HCPLUS COPYRIGHT 2009 ACS on STN

AN 2000:468120 HCPLUS Full-text

DN 133:90240

TI Polypropylene resin composition with good stiffness, impact resistance, and surface hardness

IN Mori, Ryoji; Morizono, Kenichi; Okada, Keiji

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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-----	-----	-----	-----	-----	-----
PI	JP 2000191859	A	20000711	JP 1999-294963	199910 18

<--

PRAI JP 1998-298320 A 19981020 <--

OS MARPAT 133:90240

AB Title compn. comprises (1) 30-90 wt.% of a propylene polymer having (a) limiting viscosity of 0.8-5.0 dL/g in decalin at 135°, (b) a decane-sol. content of 0.5-20 wt.% at 64°, (c) a decane-insol. content of 80-99.5 wt.% at 64°, and  $\alpha$ -olefin residue in decane-sol. fraction 0-50 mol% at 64° and (2) 10-70 wt.% of a propylene-ethylene copolymer consisting of 50-99 mol% of syndiotactic propylene residues and 1-50 mol% of ethylene residue. Thus a compn. comprised 80 parts of an isotactic ethylene-propylene block copolymer prep'd. by using a Ziegler-Natta-type catalyst and 20 parts of a syndiotactic ethylene-propylene copolymer prep'd. by using a metallocene catalyst and injection molded to give a test sample which showed flexural modulus

1100 MPa, Izod impact resistance 420 KJ/m, and surface hardness 81 HR.

IT 25085-53-4

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

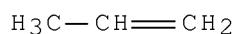
RN 25085-53-4 HCPLUS

CN 1-Propene, polymer with ethene, isotactic, block (CA INDEX NAME)

CM 1

CRN 115-07-1

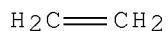
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IT 25085-53-4

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

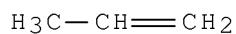
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

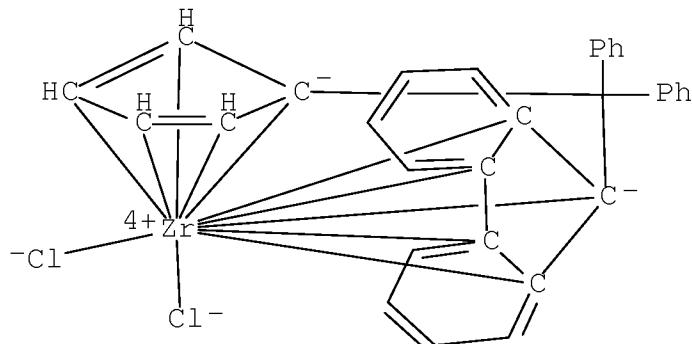


IT 132510-07-7

(prepn. of polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

RN 132510-07-7 HCAPLUS

CN Zirconium, dichloro[ $(\eta^5\text{-}2,4\text{-cyclopentadien-1-ylidene})$  (diphenylmethylene) [ $(4\text{a},4\text{b},8\text{a},9\text{a}-\eta)$ ]-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IC ICM C08L023-10

ICS C08F004-642; C08L023-16; C08L023-18; C08L053-00; C08F210-16

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 35

IT 29160-11-0P, Ethylene-propylene copolymer, syndiotactic

115404-65-4P

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

IT 25085-53-4

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

IT 84-69-5, Diisobutyl phthalate 97-93-8, Triethylaluminum, uses 100-99-2, uses 7550-45-0, Titanium tetrachloride, uses 7786-30-3, Magnesium chloride, uses 126990-35-0, Dicyclopentyldimethoxysilane 132510-07-7 136040-19-2, Triphenylcarbenium tetrakis(pentafluorophenyl)borate

(prepn. of polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

L50 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1998:208734 HCAPLUS Full-text

DN 128:271502

OREF 128:53729a, 53732a

TI Transparent, antistatic and antiblocking polypropylene laminate films for packaging of fibers

IN Imai, Tadashi; Asanuma, Tadashi; Kimura, Shigeru; Yamada, Takayuki; Imabayashi, Yoshito

PA Mitsui Toatsu Chemicals, Inc., Japan; Mitsui Chemicals Inc.

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10086298	A	19980407	JP 1996-244414	199609 17

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JP 3654720 B2 20050602

PRAI JP 1996-244414 19960917 <--

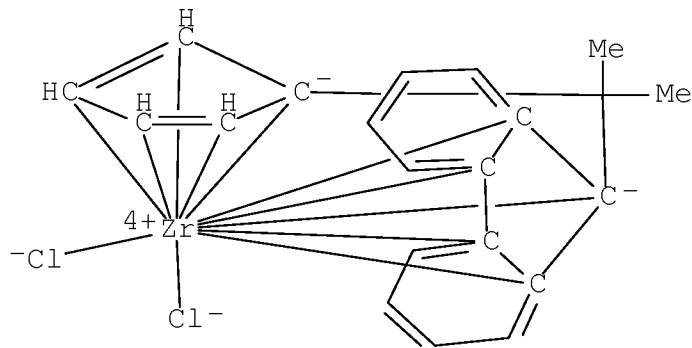
AB The laminates comprise (A) base layers with thickness at 50-95% of the total laminate thickness and made of compns. comprising cryst. propylene (I) homopolymer or I-olefin copolymers with syndiotactic pentad ratio (S)  $\geq 0.6$ , 100, ethylene-octene copolymer 25-100, and antistatic agents 0.05-0.5 part and, on both sides of A, (B) compns. comprising 100 parts isotactic polypropylenes and 0.4-1.5 parts spherical inorg. inert particles with av. particle diam. 1-10  $\mu\text{m}$ . The laminates also show good film formability and low odor after corona discharge. Thus, 100 parts syndiotactic polypropylene with S 0.793, MI 4.5 g/10 min, and polydispersity 2.4 (prepd. by using a metallocene catalyst) was blended with Engage 8452 (ethylene-octene copolymer) 50, an antioxidant 0.12, Armostat TM 310 (antistatic agent) 0.10, and Rikemal S 100A (glycerin fatty ester) 0.10 part, pelletized, and extrusion-molded with pellets (A) contg. 4.2:95.8 ethylene-I copolymer 100, an antioxidant 0.19 and SO-C 5 (SiO<sub>2</sub>) 0.5 part to give a 3-layered laminate with the A as the outer layers.

IT 130638-44-7, Isopropyl(cyclopentadienyl)(1-fluorenyl)zirconium dichloride

(for manuf. of transparent polyolefins of antistatic and antiblocking polypropylene laminated films for packaging of fibers)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene copolymer  
 (transparent, antistatic and antiblocking polypropylene laminate films for packaging of fibers)

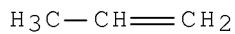
RN 56453-76-0 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM B32B027-32

ICS B32B027-18; B32B027-20; B65D065-40; C08K007-18; C08L023-08; C08L023-12

CC 38-3 (Plastics Fabrication and Uses)

IT 130638-44-7, Isopropyl(cyclopentadienyl)(1-fluorenyl)zirconium dichloride  
     (for manuf. of transparent polyolefins of antistatic and  
     antiblocking polypropylene laminated films for packaging of  
     fibers)

IT 26063-22-9P, Syndiotactic polypropylene 56453-76-0P,  
     Isotactic ethylene-propylene copolymer  
     (transparent, antistatic and antiblocking polypropylene laminate  
     films for packaging of fibers)

L50 ANSWER 16 OF 16 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1997:48898 HCPLUS Full-text

DN 126:60914

OREF 126:11955a

TI Reactor blends of small amounts of syndiotactic polypropylene in  
     isotactic polypropylene

IN Shamshoum, Edwar S.; Reddy, Baireddy R.; Paiz, Rolando; Goins,  
     Michael J.

PA Fina Technology, Inc., USA

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 747430	A1	19961211	EP 1996-109107	199606 07
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	EP 747430	B1	20000329		
	R: BE, DE, ES, FR, GB, IT, NL				
	US 6407177	B1	20020618	US 1995-475315	199506 07
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CA	2178419	A1	19961208	CA 1996-2178419	199606 06
				<--	
JP	09100374	A	19970415	JP 1996-168254	199606 07
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JP	3673326	B2	20050720		
ES	2144668	T3	20000616	ES 1996-109107	

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PRAI US 1995-475315 A 19950607 <--

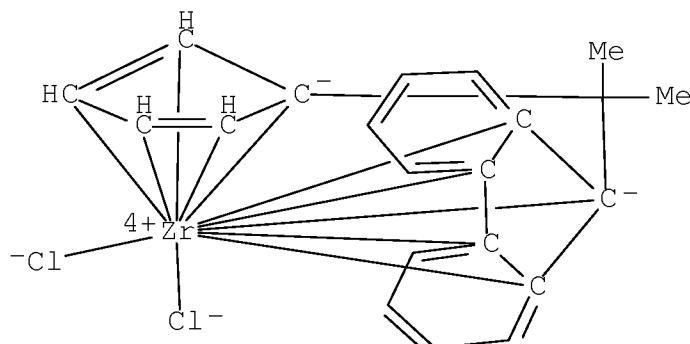
AB Polymer blends of isotactic polypropylene and syndiotactic polypropylene enhance the processability in film applications. The blends comprise a reactor blend of isotactic and syndiotactic polypropylene, wherein the process is carried out by polymg. of propylene in presence of Ziegler-Natta catalyst components, metallocene compds. supported on silica treated with an aluminoxane and organoaluminum compds. to contact each other to form activated catalysts in a reaction zone. Thus, polymn. of propylene in presence of H, triethylaluminum, triisobutylaluminum, 1:3 hexane and heptane mixt., cyclohexylmethyldimethoxysilane, Ziegler-Natta catalyst in mineral oil and diphenylmethyl(fluorenyl)(cyclopentadienyl)zirconium dichloride supported on Me aluminoxane-treated silica gave a polymer blend having mol. wt. distribution 9.0, syndiotactic polypropylene <2%, melt flow index 2.9 g/10 min and styrene solv. 3.6%.

IT 130638-44-7

(reactor blends of small amts. of syndiotactic polypropylene in isotactic polypropylene)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

26063-22-9P, Syndiotactic polypropylene

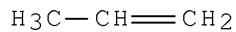
(reactor blends of small amts. of syndiotactic polypropylene in isotactic polypropylene)

RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

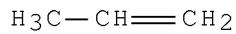
CRN 115-07-1  
CMF C3 H6



RN 26063-22-9 HCPLUS  
CN 1-Propene, homopolymer, syndiotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
CMF C3 H6



IC ICM C08L023-00  
ICS C08L023-10  
CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35, 38  
IT 97-93-8, Triethylaluminum, uses 100-99-2, Triisobutylaluminum,  
uses 110-54-3, Hexane, uses 142-82-5, Heptane, uses  
17865-32-6, Cyclohexylmethyldimethoxysilane 130638-44-7  
(reactor blends of small amts. of syndiotactic polypropylene in  
isotactic polypropylene)  
IT 25085-53-4P, Isotactic polypropylene  
26063-22-9P, Syndiotactic polypropylene  
(reactor blends of small amts. of syndiotactic polypropylene in  
isotactic polypropylene)

=> D L69 1-24 BIB ABS HITSTR HITIND RE

L69 ANSWER 1 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN  
AN 2004:857142 HCPLUS Full-text  
DN 141:332635

TI Supported metallocene catalysts and the use of such catalysts in  
isotactic polymerization of C<3 ethylenically unsaturated monomer  
IN Gauthier, William J.; Kerr, Margaret; Tian, Jun; Rauscher, David J.;  
Patrick, Constance Hayworth; Henry, Shady  
PA Fina Technology, Inc., USA  
SO U.S. Pat. Appl. Publ., 17 pp.  
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20040204310	A1	20041014	US 2003-412372	200304 11
				<--	
	US 6855783	B2	20050215		
	CA 2521652	A1	20041028	CA 2004-2521652	200404 07
				<--	
WO	2004092225	A1	20041028	WO 2004-US10725	200404 07
				<--	
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP	1613665	A1	20060111	EP 2004-759233	200404 07
				<--	
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
CN	1795211	A	20060628	CN 2004-80014556	200404

&lt;--

JP 2007524721

T

20070830

JP 2006-509787

200404

07

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PRAI US 2003-412372

A

20030411 &lt;--

WO 2004-US10725

W

20040407 &lt;--

OS MARPAT 141:332635

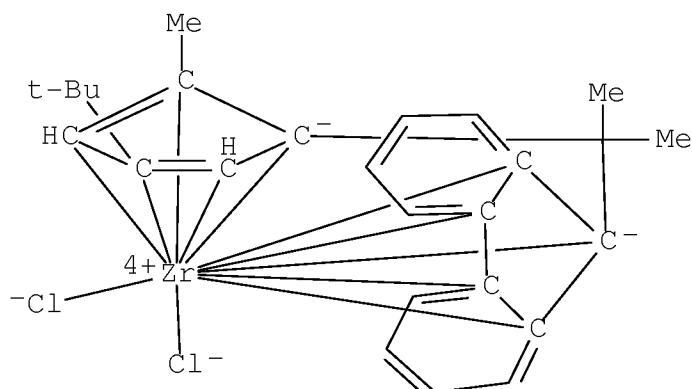
AB The supported catalysts comprise a particulate SiO<sub>2</sub> support, an alkyl alumoxane component, and a metallocene catalyst component. The support has an av. particle size 10-50  $\mu\text{m}$ , a surface area 200-800 m<sup>2</sup>/g and a pore vol. 0.9-2.1 mL/g. Alumoxane is incorporated onto the support to provide alumoxane/SiO<sub>2</sub> wt. ratio  $\geq 0.8:1$ . The catalyst is comprised of  $\geq 1\%$  SiO<sub>2</sub> and the alumoxane, and B(C<sub>p</sub>R<sub>a</sub>R<sub>b</sub>)(F<sub>1'</sub>)M<sub>Q</sub> in which F<sub>1'</sub> is an unsubstituted fluorenyl group or a fluorenyl group sym. substituted at the 3 and 6 positions, B is a structural bridge between C<sub>p</sub> and F<sub>1'</sub>, R<sub>a</sub> is a bulky substituent in a distal position, R<sub>b</sub> is a less bulky substituent proximal to the bridge and nonvicinal to the distal substituent, M is Group IVB transition metal or V, and Q is a halogen or a C<sub>1-4</sub>-alkyl, such as isopropylidene (3-tert-Bu, 5-Me cyclopentadienyl) (3,6-ditertiary Bu fluorenyl) zirconium dichloride component.

IT 217176-68-6

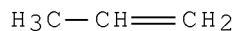
(supported bridged cyclopentadienyl-fluorenyl metallocene complex catalysts in isotactic polymn. of)

RN 217176-68-6 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(supported bridged cyclopentadienyl-fluorenyl metallocene complex  
catalysts in isotactic polymn. of)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
CM 1  
CRN 115-07-1  
CMF C3 H6



IC ICM B01J031-00  
ICS C08F004-44  
INCL 502103000; 526129000; 526943000; 526160000; 526351000; 526352000;  
502152000; 556011000; 556027000; 556043000  
CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 67  
IT 217176-68-6 773080-47-0  
(supported bridged cyclopentadienyl-fluorenyl metallocene complex  
catalysts in isotactic polymn. of)  
IT 25085-53-4P, Isotactic polypropylene  
(supported bridged cyclopentadienyl-fluorenyl metallocene complex  
catalysts in isotactic polymn. of)  
RE  
(1) Anon; EP 0881236 A1 1998 HCAPLUS  
(2) Burkhardt; US 6414095 B1 2002 HCAPLUS  
(3) Elder; US 5155080 A 1992 HCAPLUS  
(4) Ewen; US 4522982 A 1985  
(5) Ewen; US 4767735 A 1988 HCAPLUS  
(6) Ewen; US 4794096 A 1988 HCAPLUS  
(7) Ewen; US 5036034 A 1991 HCAPLUS  
(8) Ewen; US 5459117 A 1995 HCAPLUS  
(9) Irani; US 5146228 A 1992  
(10) Razavi; US 5334677 A 1994 HCAPLUS  
(11) Razavi; US 6515086 B1 2003 HCAPLUS  
(12) Reddy; US 5945365 A 1999 HCAPLUS  
(13) Shamshoum; US 5968864 A 1999 HCAPLUS  
(14) Sinn; US 4404344 A 1983 HCAPLUS  
(15) Zenk; US 5451649 A 1995 HCAPLUS

AN 2004:847584 HCAPLUS Full-text  
DN 141:332634  
TI Production method of propylene copolymers and films therefrom  
IN Ikenaga, Shigenobu; Okada, Keiji; Takayasu, Hiroshi; Inoue,  
Norihide; Hirota, Naritoshi; Kaneyoshi, Hiromu; Funaya, Munehito;  
Kawai, Koji; Kawahara, Nobuo; Kojoh, Shinichi; Kashiwa, Norio; Mori,  
Ryoji

PA Mitsui Chemicals, Inc., Japan

SO PCT Int. Appl., 212 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004087775	A1	20041014	WO 2003-JP16972	200312 26
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	W: AU, CN, JP, KR, SG, US				
	RW: BE, DE, FR, GB, IT				
	AU 2003292690	A1	20041025	AU 2003-292690	200312 26
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	AU 2003292690	B2	20081120		
	EP 1614699	A1	20060111	EP 2003-768331	200312 26
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	EP 1614699	B1	20081015		
	R: BE, DE, FR, GB, IT				
	CN 1759128	A	20060412	CN 2003-80110217	200312 26
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	EP 1985637	A1	20081029	EP 2008-11463	200312 26
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	R: BE, DE, FR, GB, IT				
	EP 1985638	A1	20081029	EP 2008-11465	200312 26
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	R: BE, DE, FR, GB, IT				

EP 1988104	A1	20081105	EP 2008-11464	
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R: BE, DE, FR, GB, IT				
US 20060276607	A1	20061207	US 2006-550017	
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US 7488789	B2	20090210		
US 20080292896	A1	20081127	US 2008-185566	
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AU 2009200064	A1	20090205	AU 2009-200064	
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AU 2009200068	A1	20090205	AU 2009-200068	
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PRAI JP 2003-90161	A	20030328	<--	
AU 2003-292690	A3	20031226	<--	
EP 2003-768331	A3	20031226	<--	
WO 2003-JP16972	W	20031226	<--	
US 2006-550017	A3	20060629		

OS MARPAT 141:332634

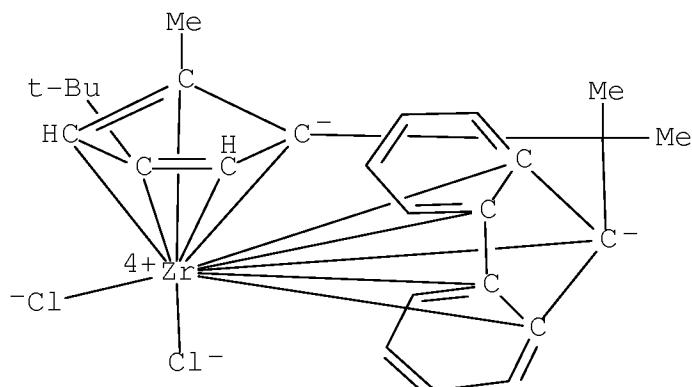
AB The invention provides a propylene/1-butene random copolymer excellent in flexibility, impact resistance, heat resistance, and low-temp. heat sealability; a polypropylene compn. contg. the copolymer; sheet made from the compn.; and composite films each comprising a (stretched) film and a layer made from the above compn. The copolymer comprises 60 to 90 mol % of propylene units and 10 to 40 mol % of 1-butene units and has a triad isotacticity 85-97.5 %, a mol. wt. distribution (Mw/Mn) 1-3, a limiting viscosity 0.1-12 dL/g, and a m.p. (Tm) 40-120°, and Tm and 1-butene unit content (M mole %) satisfying the relationship:  $146\exp(-0.022M) \geq Tm \geq 125\exp(-0.032M)$ . The invention also provides transition metal compds. useful as the catalyst component for olefin polymn., and catalysts for olefin polymn. contg. the transition metal compds.

IT 217176-68-6

(prodn. method of propylene copolymers and films therefrom)

RN 217176-68-6 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(prodn. method of propylene copolymers and films therefrom)

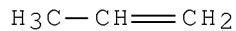
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F210-06  
ICS C08L023-10; C08J005-18; C07C017-00; C08F004-64; B32B027-32;  
C08F210-08; C07F007-00

CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 39

IT 97-93-8, Triethylaluminum, uses 100-99-2, Triisobutylaluminum,  
uses 217176-68-6 773081-83-7  
(prodn. method of propylene copolymers and films therefrom)

IT 9002-88-4P, Polyethylene 9010-79-1P, Ethylene-propylene copolymer  
25085-53-4P, Isotactic polypropylene  
(prodn. method of propylene copolymers and films therefrom)

RE

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- (2) Fina Research S A; CN 1346373 A 2002
- (3) Fina Research S A; JP 2002510358 A 2002
- (4) Fina Research S A; US 6515086 B1 2002 HCPLUS
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- (7) Mitsui Chemicals Inc; WO 0127124 A1 2001 HCPLUS
- (8) Mitsui Chemicals Inc; EP 1138687 A1 2001 HCPLUS
- (9) Mitsui Chemicals Inc; CN 1327448 A 2001
- (10) Mitsui Chemicals Inc; KR 2001086089 A 2001
- (11) Mitsui Petrochemical Industries Ltd; JP 62-119212 A 1987 HCPLUS
- (12) Mitsui Petrochemical Industries Ltd; JP 08-208909 A 1996 HCPLUS
- (13) Mitsui Petrochemical Industries Ltd; JP 08-283343 A 1996 HCPLUS
- (14) Mitsui Petrochemical Industries Ltd; CN 1139130 A 1996 HCPLUS
- (15) Mitsui Petrochemical Industries Ltd; KR 190429 B1 1996 HCPLUS
- (16) Mitsui Petrochemical Industries Ltd; US 5998039 A 1996 HCPLUS
- (17) Mitsui Petrochemical Industries Ltd; EP 716121 A1 1996 HCPLUS
- (18) Sumitomo Chemical Co Ltd; JP 08-176218 A 1996 HCPLUS
- (19) Sumitomo Chemical Co Ltd; US 5830968 A 1996 HCPLUS
- (20) Sumitomo Chemical Co Ltd; SG 63595 A1 1996
- (21) Sumitomo Chemical Co Ltd; EP 669348 A1 1996 HCPLUS
- (22) The Board Of Trustees Of The Leland Stanford; US 6184317 B1 1999  
HCPLUS
- (23) The Board Of Trustees Of The Leland Stanford; US 6380125 B1 1999  
HCPLUS
- (24) The Board Of Trustees Of The Leland Stanford; WO 9902569 A1 1999  
HCPLUS
- (25) Vormak, M; JP 37-8483 B1 1962

L69 ANSWER 3 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2004:409979 HCAPLUS Full-text  
 DN 140:407540  
 TI Manufacture of olefin graft copolymers useful as polymer blend compatibilizers  
 IN Machida, Shuji; Shiguma, Haruo  
 PA Idemitsu Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 83 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004143436	A	20040520	JP 2003-330279	200309 22

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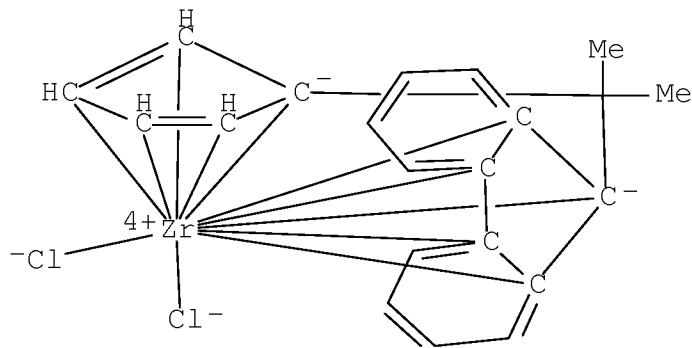
PRAI JP 2002-289522 A 20021002 <--  
 OS MARPAT 140:407540

AB Title copolymers are prep'd. by polymg. (A1) C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>-20  $\alpha$ -olefins, cyclic olefins, and/or styrene and (A2) polyenes in the presence of (B1) Group III-X element-, actinoid-, and/or lanthanoid-contg. major catalyst components and (B2) co-catalysts selected from aluminoxanes, transition metal compd.-reacted ionic compd.-based ionization agents, Lewis acids, clay (minerals), ion-exchanged layered compds., Group I-III or Group XI-XIII alkyl metal compds. to form polyolefins, then washing to remove unused polyenes, and further polymg. more A1 monomers. Polymg. 1,9-decadiene and C<sub>3</sub>H<sub>6</sub> in the presence of Al(iso-Bu)<sub>3</sub>, SiO<sub>2</sub>-supported methylaluminoxane, and rac-dimethylsilanediyl-bis-1-(2-methyl-4-phenylindenyl) ZrCl<sub>2</sub>, washed, and further polymg. with C<sub>2</sub>H<sub>4</sub> in presence of isopropenylcyclopentadienylfluorenyl ZrCl<sub>2</sub> and Al(iso-Bu)<sub>3</sub> gave a graft copolymer with  $[\eta]$  2.1 dL/g and polydispersity 6.5, and p-xylene-insol. gel content 0.5%. A 0.01% Irganox 1010-added blend of F 704NP 33.75, Xarec 13-ZC 9, p-3-butenyl-styrene-propene-styrene graft copolymer (I) 2.25 g was hot-pressed and punched to form a test piece with tensile modulus 1,700 MPa and break elongation 140%; vs., 1,510 and 14, resp., for a I-free blend.

IT 130638-44-7  
 (manuf. of polyene-olefin graft copolymers as compatibilizers for polymer blends for high mech. strength)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Polypro F 704NP

(manuf. of polyene-olefin graft copolymers as compatibilizers for polymer blends for high mech. strength)

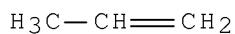
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F291-00

ICS C08F004-64

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 67

IT 96-10-6, Diethylaluminum chloride, uses 100-99-2, Triisobutyl aluminum, uses 7705-07-9, Titanium trichloride, uses 126990-35-0, Dicyclopentylmethoxysilane 130638-44-7 153882-67-8

(manuf. of polyene-olefin graft copolymers as compatibilizers for polymer blends for high mech. strength)

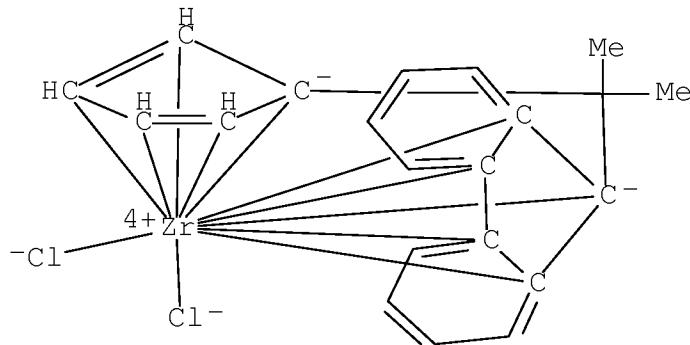
IT 25085-53-4, Polypro F 704NP 28325-75-9, Xarec 130ZC

(manuf. of polyene-olefin graft copolymers as compatibilizers for polymer blends for high mech. strength)

L69 ANSWER 4 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2003:995162 HCAPLUS Full-text

DN 140:236142  
TI The detailed analysis of the vinylidene structure of  
metallocene-catalyzed **polypropylene**  
AU Kawahara, Nobuo; Kojoh, Shin-ichi; Toda, Yoshihisa; Mizuno, Akira;  
Kashiwa, Norio  
CS R and D Center, Mitsui Chemicals, Inc., Chiba-ken, Sodegaura-shi,  
299-0265, Japan  
SO Polymer (2004), 45(2), 355-357  
CODEN: POLMAG; ISSN: 0032-3861  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
AB The vinylidene structures in polypropylene produced by  
ethylenebis(indenyl)zirconium dichloride (a) and  
isopropyl(cyclopentadienyl)(fluorenyl)zirconium dichloride (b), were  
analyzed by  $^1\text{H}$  NMR. The vinylidene group adjacent to the chain end  
was clearly distinguished from other internal vinylidene structures  
for the first time using 1,2-dichlorobenzene as solvent. The  
polypropylene produced by (b) had much internal vinylidene groups  
compared with one by (a).  
IT 130638-44-7, Zirconium  
dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-  
fluoren-9-ylidene]-  
(polymn. catalyst, metallocene; vinylidene structure of  
metallocene catalyzed polypropylene)  
RN 130638-44-7 HCAPLUS  
CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-  
methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



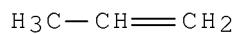
IT 25085-53-4P  
(vinylidene structure of metallocene catalyzed polypropylene)  
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)

IT 112243-78-4, Ethylenebis(indenyl)zirconium dichloride  
130638-44-7, Zirconium

dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]-

(polymn. catalyst, metallocene; vinylidene structure of metallocene catalyzed polypropylene)

IT 9003-07-0P, Polypropylene 25085-53-4P  
(vinylidene structure of metallocene catalyzed polypropylene)

RE

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- (2) Dang, V; Organometallics 1999, V18, P3781 HCPLUS
- (3) Ewen, J; J Am Chem Soc 1988, V110, P6255 HCPLUS
- (4) Fu, P; J Am Chem Soc 1995, V117, P7157 HCPLUS
- (5) Kojoh, S; Polym J 1999, V31, P332 HCPLUS
- (6) Lu, B; Macromolecules 1999, V32, P8678 HCPLUS
- (7) Resconi, L; J Am Chem Soc 1998, V120, P2308 HCPLUS
- (8) Rieger, B; J Mol Catal 1993, V82, P67 HCPLUS
- (9) Schaverien, C; Organometallics 2001, V20, P3436 HCPLUS
- (10) Shiono, T; Macromolecules 1992, V25, P3356 HCPLUS
- (11) Shiono, T; Macromolecules 1997, V30, P5997 HCPLUS
- (12) Tsutsui, T; Polymer 1989, V30, P428 HCPLUS
- (13) Weng, W; Macromol Rapid Commun 2000, V2, P1103
- (14) Yanjarappa, M; Prog Polym Sci 2002, V27, P1347 HCPLUS

L69 ANSWER 5 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 2002:921386 HCPLUS Full-text

DN 138:5109

TI Thermoplastic resin compositions, their moldings, styrene-based compatibilizers therefor, and preparation thereof

IN Machida, Shuji; Yokota, Kiyohiko; Sato, Kazuo; Takarazaki, Tatsuya  
PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 51 pp.

CODEN: JKXXAF

DT Patent  
LA Japanese  
FAN.CNT 1

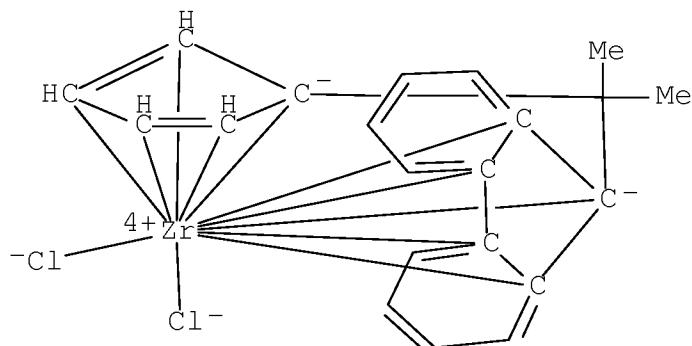
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002348342	A	20021204	JP 2001-156448	200105 25

PRAI JP 2001-156448 20010525 <--  
AB The compatibilizers comprise diblock structure having styrene (deriv.)-derived polymer blocks and ethylene-, styrene-, C3-20  $\alpha$ -(cyclo)olefin-, and/or their deriv.-derived polymer blocks where monomer species, stereoregularity, and/or compn. is different in the two blocks. The diblock copolymers (i) have macromonomer-derived graft chains or (ii) satisfy author's specified solv. difference between the two polymer blocks. The compatibilizers are prep'd. in the presence of combined stereospecific catalyst systems that essentially contain compds. of Group IIIB-VIII metals, actinides, and/or lanthanides. The compns. contain 0.01-30% the compatibilizers. Thus, styrene was polymd. with propylene in the presence of Al(iso-Bu)<sub>3</sub>, Me aluminoxane, AlMe<sub>3</sub>, rac-dimethylsilylene(2-methyl-4-benzoindenyl)zirconium dichloride to give a stereoblock copolymer showing high compatibilizing activity to 17:83 (%) blend of syndiotactic polypropylene and low-isotactic polypropylene.

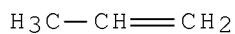
IT 130638-44-7  
(combined catalyst systems; stereospecific styrene-based  
compatibilizers having macromonomer-derived graft chains for  
thermoplastic resin blends)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[η<sub>10-2,4</sub>-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(stereospecific styrene-based compatibilizers having  
macromonomer-derived graft chains for thermoplastic resin blends)  
RN 25085-53-4 HCPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
CM 1  
CRN 115-07-1  
CMF C3 H6



IC ICM C08F297-06  
ICS C08F004-606; C08L101-00; C08L053-00  
CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35, 38  
IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
130638-44-7 150995-51-0,  
Rac-dimethylsilylenebis(2-methyl-4,5-benzoindenyl)zirconium  
dichloride  
(combined catalyst systems; stereospecific styrene-based  
compatibilizers having macromonomer-derived graft chains for  
thermoplastic resin blends)  
IT 9002-88-4, HD 440M 25085-53-4, Isotactic polypropylene  
26063-22-9, Syndiotactic polypropylene 26221-73-8, FM 1570  
28325-75-9, Syndiotactic polystyrene  
(stereospecific styrene-based compatibilizers having  
macromonomer-derived graft chains for thermoplastic resin blends)

L69 ANSWER 6 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN  
AN 2002:918263 HCPLUS Full-text

DN 138:5101

TI Thermoplastic resin compositions, their moldings, olefin-based  
compatibilizers therefor, and preparation thereof

IN Machida, Shuji; Yokota, Kiyohiko; Sato, Kazuo; Hozaki, Tatsuya  
PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 57 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002348343	A	20021204	JP 2001-159028	200105 28

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PRAI JP 2001-159028

20010528 <--

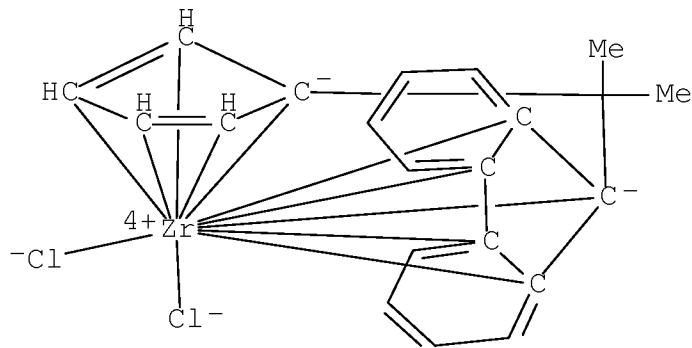
AB The compatibilizers comprise diblock copolymers of ethylene, styrene, C3-20  $\alpha$ -(cyclo)olefins, and/or their derivs. where monomer species, stereoregularity, and/or compns. is different in different polymer block. The diblock copolymers (i) have macromonomer-derived graft chains, (ii) exhibit meso- or racemic pentad fraction [mmmm] or [rrrr] 35-100%, or (iii) satisfy author's specified solv. difference between the two polymer blocks. The compatibilizers are prep'd. in the presence of combined stereospecific catalyst systems that essentially contain compds. of Group IIIB-VIII metals, actinides, and/or lanthanides. The compns. contain 0.01-30% the compatibilizers. Thus, propylene was polymd. in the presence of Al(iso-Bu)<sub>3</sub>, Me aluminoxane, AlMe<sub>3</sub>, (1,2'-dimethylsilylene)(2,1'-dimethylsilylene)(3- trimethylsilylmethyleneindenyl)zirconium dichloride, and isopropylidene(cyclopentadienyl)(fluorenyl)dichlorozirconium to give stereoblock stereograft polypropylene showing high compatibilizing activity to 17:83 (%) blend of syndiotactic polypropylene and low-isotactic polypropylene.

IT 130638-44-7, Isopropylidene(Cyclopentadienyl)(9-fluorenyl)zirconium dichloride

(combined catalyst systems; stereospecific olefin-based compatibilizers having macromonomer-derived graft chains for thermoplastic resin blends)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
 (stereospecific olefin-based compatibilizers having  
 macromonomer-derived graft chains for thermoplastic resin blends)

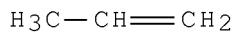
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F297-06  
 ICS C08F004-606; C08L101-00; C08L053-00  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 35, 38  
 IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
 130638-44-7, Isopropylidene(Cyclopentadienyl)(9-  
 fluorenyl)zirconium dichloride 135539-57-0 215051-05-1  
 220036-58-8, (1,2'-Dimethylsilylene)(2,1'-  
 dimethylsilylene)bis(indenyl)hafnium dichloride 332172-16-4,  
 (1,2'-Dimethylsilylene)(2,1'-dimethylsilylene)bis(3-  
 trimethylsilylmethyleneindenyl)zirconium dichloride  
 (combined catalyst systems; stereospecific olefin-based  
 compatibilizers having macromonomer-derived graft chains for  
 thermoplastic resin blends)  
 IT 9002-88-4, HD 440M 25085-53-4, Isotactic polypropylene  
 26063-22-9, Syndiotactic polypropylene  
 (stereospecific olefin-based compatibilizers having

macromonomer-derived graft chains for thermoplastic resin blends)

L69 ANSWER 7 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 2002:918261 HCPLUS Full-text

DN 138:5100

TI Thermoplastic resin compositions, their moldings, olefin-based compatibilizers therefor, and preparation thereof

IN Machida, Shuji; Yokota, Kiyohiko; Sato, Kazuo; Hozaki, Tatsuya  
PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 59 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002348336	A	20021204	JP 2001-159027	200105 28

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PRAI JP 2001-159027 20010528 <--

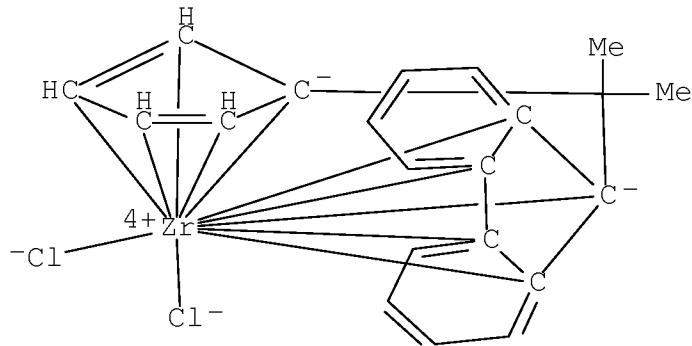
AB The compatibilizers comprise diblock copolymers of ethylene, styrene, C3-20  $\alpha$ -(cyclo)olefins, and/or their derivs. where monomer species, stereoregularity, and/or compns. is different in different polymer block. The diblock copolymers (i) have grafted polyene chains or (ii) contain trace amt. of polyenes to satisfy author's specified solv. difference between the two polymer blocks. The compatibilizers are prep'd. in the presence of combined stereospecific catalyst systems that essentially contain compds. of Group IIIB-VIII metals, actinides, and/or lanthanides. The compns. contain 0.01-30% the compatibilizers. Thus, 1,9-decadiene was prepolymd. in the presence of Al(iso-Bu)<sub>3</sub> and Me aluminoxane and then further polymd. with propylene in the presence of (1,2'-dimethylsilylene)(2,1'-dimethylsilylene)(3-trimethylsilylmethyleneindenyl)zirconium dichloride, and isopropylidene(cyclopentadienyl)(fluorenyl)dichlorozirconium to give a copolymer having low-isotactic polypropylene-co-syndiotactic polypropylene backbone and poly(1,9-decadiene) graft chain and showing high compatibilizing activity to 17:83 (%) blend of syndiotactic polypropylene and low-isotactic polypropylene.

IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride

(combined polymn. catalyst systems; olefin- and polyene-based block graft copolymers as compatibilizers for thermoplastic resin blends)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(olefin- and polyene-based block graft copolymers as compatibilizers for thermoplastic resin blends)

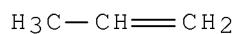
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F287-00

ICS C08F004-645; C08F010-00

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35, 38

IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride 153882-67-8,  
Rac-dimethylsilylenebis(2-methyl-4-phenylindenyl)zirconium dichloride 183431-85-8, Rac-(1,2'-ethylene)(2,1'-ethylene)-bis(3-methylindenyl)zirconium dichloride 220036-58-8,  
(1,2'-Dimethylsilylene)(2,1'-dimethylsilylene)bis(indenyl)hafnium dichloride 332172-16-4, (1,2'-Dimethylsilylene)(2,1'-

dimethylsilylene)bis(3-trimethylsilylmethylindenyl)zirconium  
dichloride

(combined polymn. catalyst systems; olefin- and polyene-based  
block graft copolymers as compatibilizers for thermoplastic resin  
blends)

IT 9002-88-4, HD 440M 9003-07-0, Atactic polypropylene  
25085-53-4, Isotactic polypropylene 26063-22-9,  
Syndiotactic polypropylene 28325-75-9, Syndiotactic polystyrene  
(olefin- and polyene-based block graft copolymers as  
compatibilizers for thermoplastic resin blends)

L69 ANSWER 8 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 2002:808461 HCPLUS Full-text

DN 137:311374

TI Ansa-bridged metallocene catalysts for controlled polymerization of  
olefins

IN Miller, Stephen A.; Bercaw, John E.

PA California Institute of Technology, USA

SO U.S., 32 pp.

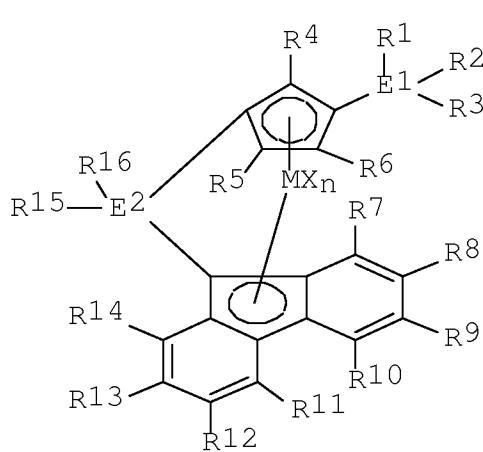
CODEN: USXXAM

DT Patent

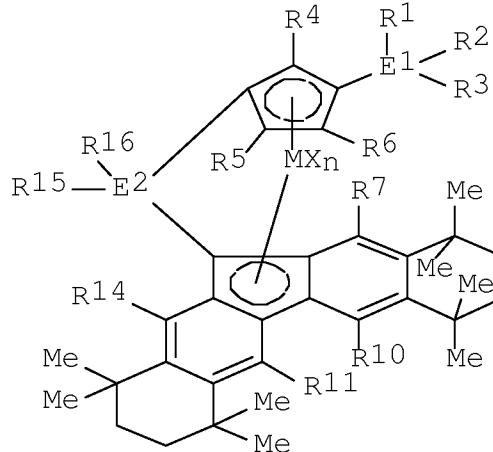
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6469188	B1	20021022	US 2000-488431	200001 20
	US 20030139544	A1	20030724	US 2002-267988	200210 08
PRAI	US 6693153	B2	20040217	<--	
	US 1999-116522P	P	19990120	<--	
	US 1999-116646P	P	19990120	<--	
	US 1999-150083P	P	19990820	<--	
	US 2000-488431	A3	20000120	<--	
OS	MARPAT 137:311374				
GI					



I



II

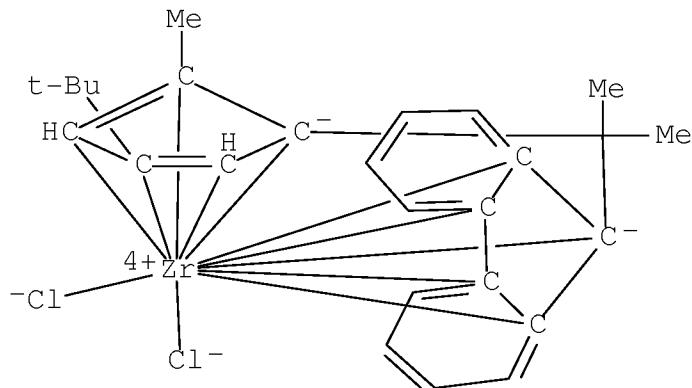
AB Bridged metallocene complexes I and II were synthesized and used as catalysts for controlled polymn. of alkenes to a wide variety of isotactic, syndiotactic and stereoblock polyolefins and olefin copolymers, where M = Group III-V transition metals; X = H, F, Cl, Br, I, C1-10 alkyl, C1-10 alkoxy, C6-20 aryl, C6-20 alkylaryl or C6-20 aryloxy; n = 1-3; E1, E2 = C, Si or Ge; R1-3 = independently C1-10 alkyl, C1-10 silyl or C3-10 cycloalkyl; R1-R16 = independently H, C1-10 alkyl, C3-10 cycloalkyl, C6-16 aryl, C6-16 arylalkyl or C6-16 silyl, and optionally any two adjacent members of R5-R14 can form a ring. The type of polymer produced can be controlled by varying the catalyst system, specifically by varying the ligand substituents. Such catalyst systems are particularly useful for the polymn. of propylene to give elastomeric polypropylenes, which are characterized by dyad (m) tacticities of 55-65%, pentad (mmmm) tacticities of 25-35%, mol. wt. of 50,000-2,000,000, and mmrrm+rrmr peak  $\leq$  5%.

IT 217176-68-6

(bridged metallocene catalysts for controlled polymn. of olefins with specific tacticities)

RN 217176-68-6 HCPLUS

CN Zirconium, dichloro[η<sub>10</sub>-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IT 25085-53-4P

(bridged metallocene catalysts for controlled polymn. of olefins with specific tacticities)

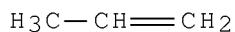
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C07F017-00

ICS B01J031-00; C08F004-642

INCL 556012000

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29

IT 132510-07-7 132880-06-9 133190-48-4 146961-02-6 148423-37-4

148799-37-5 217176-68-6 473173-84-1 473173-87-4

473173-91-0 473174-08-2 473174-12-8 473174-16-2 473174-20-8

473174-30-0

(bridged metallocene catalysts for controlled polymn. of olefins with specific tacticities)

IT 25085-53-4P 26063-22-9P, Polypropylene, syndiotactic

(bridged metallocene catalysts for controlled polymn. of olefins with specific tacticities)

RE

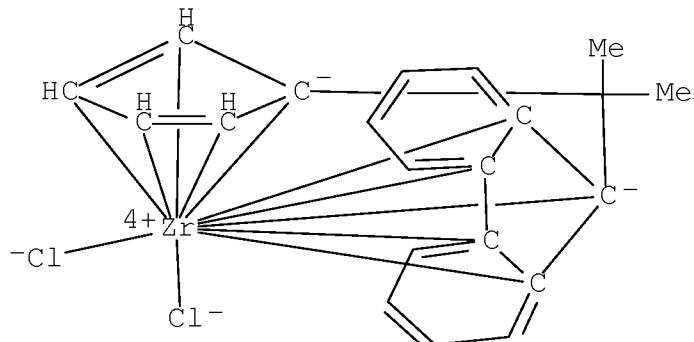
(1) Abrams, M; Organometallics 1999, V18, P1389 HCPLUS

(2) Alt, H; J Organometallic Chemistry 1998, V568, P87 HCPLUS  
(3) Anon; EP 277003 1988 HCPLUS  
(4) Anon; EP 277004 1988 HCPLUS  
(5) Anon; EP 427697 1990 HCPLUS  
(6) Anon; JP 07-002935 1995  
(7) Anon; JP 7002935 1995  
(8) Anon; JP 09-194552 1997 HCPLUS  
(9) Anon; JP 9194552 1997  
(10) Anon; WO 9854230 1998 HCPLUS  
(11) Anon; WO 9914219 1999 HCPLUS  
(12) Anon; WO 9967309 1999 HCPLUS  
(13) Anon; WO 0049029 2000 HCPLUS  
(14) Anon; WO 0049056 2000  
(15) Anon; WO 0127124 A1 2001 HCPLUS  
(16) Anon; EP 1138687 A1 2001 HCPLUS  
(17) Averbuj, C; J Am Chem Soc 1998, V120, P8640 HCPLUS  
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(19) Bochmann, M; Angew Chem Int Ed Engl 1990, V29, P780  
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(21) Brintzinger, H; Angew Chem Int Ed Engl 1995, V34, P1143 HCPLUS  
(22) Bruce, M; J Am Chem Soc 1997, V119, P11174 HCPLUS  
(23) Chien; US 5756614 A 1998 HCPLUS  
(24) Ewen; US 5036034 A 1991 HCPLUS  
(25) Hoel; US 4871705 A 1989 HCPLUS  
(26) Hoel; US 5001205 A 1991 HCPLUS  
(27) Hoel; US 5491207 A 1996 HCPLUS  
(28) Kaminsky; US 4542199 A 1985 HCPLUS  
(29) Miller, S; Ph D diss, Calif Inst of Tech, Thesis 1-320 2000  
(30) Okumura; US 5770664 A 1998 HCPLUS  
(31) Resconi; US 5886123 A 1999 HCPLUS  
(32) Schiffino; US 5696213 A 1997 HCPLUS  
(33) Waymouth; US 5594080 A 1997 HCPLUS  
(34) Waymouth; US 5969070 A 1999 HCPLUS

L69 ANSWER 9 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN  
AN 2002:716334 HCPLUS Full-text  
DN 137:248404  
TI Manufacture of polyolefin resin compositions and polypropylene compositions  
IN Machida, Shuji; Shinohara, Masayuki; Housaki, Tatsuya  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO PCT Int. Appl., 146 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2002072649	A1	20020919	WO 2002-JP2299	200203 12
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W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
EP 1375538	A1	20040102	EP 2002-702904	200203 12
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EP 1375538	B1	20080109		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
US 20040106738	A1	20040603	US 2003-469701	200309 12
<--				
PRAI JP 2001-68422	A	20010312	<--	
JP 2001-71948	A	20010314	<--	
JP 2001-136854	A	20010508	<--	
JP 2001-136855	A	20010508	<--	
WO 2002-JP2299	W	20020312	<--	
OS MARPAT 137:248404				
AB	Title highly uniform polyolefin resin compns., having improved melt tension and melt processability, are prep'd. by first polymn. of C <sub>2</sub> H <sub>4</sub> , C <sub>3</sub> H <sub>6</sub> , C <sub>4</sub> -20 $\alpha$ -olefins, styrene, and/or cycloolefins in the presence of cyclopentadienyl skeleton-contg. Group IV transition metal compd. catalysts and catalyst aids to form polymers (A), followed by second polymn. of the A with the monomers described in first polymn. in the presence of polyenes at an amt. of 1.0 + 10 <sup>-7</sup> to 1.0 + 10 <sup>-3</sup> mol per g the A polymers. Polymg. C <sub>3</sub> H <sub>6</sub> in the presence of Al(iso-Bu) <sub>3</sub> and a catalyst prep'd. from SiO <sub>2</sub> -supported methylaluminoxane and rac-dimethylsilylbis[2-methyl-4-phenyl-indenyl] ZrCl <sub>2</sub> at 70° to form polypropylene (I), further polymg. the I with more C <sub>3</sub> H <sub>6</sub> in the presence of 1,9-decadiene at 1.6 + 10 <sup>-6</sup> mol per g of I at 40° gave a polymer compn. showing melt index 0.98 g/10 min, bulk d. 0.45 g/mL. melt tension 16.8 g, no Decalin-insol. content, polydispersity 3.5, and intrinsic viscosity of polymer in the second step to the first step of 1.11. Other polypropylene compn. examples showed branching parameter and index in sp. ranges and regulated content of high-mol. wt. components or further molded into gel-free foam moldings.			
IT 130638-44-7	(manuf. of polyolefin and polypropylene compns. by 2-step process			

involving specific catalysts and polyene for moldings)  
RN 130638-44-7 HCAPLUS  
CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

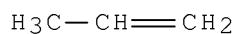


IT 25085-53-4P, Isotactic polypropylene  
(manuf. of polyolefin and polypropylene compns. by 2-step process  
involving specific catalysts and polyene for moldings)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F210-16  
ICS C08L023-16; C08F004-64; C08F297-06  
CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 67  
IT 97-93-8, Triethylaluminum, uses 100-99-2, Trisisobutylaluminum,  
uses 130638-44-7 143278-86-8,  
Rac-dimethylsilylenebis[2-methylindenyl]zirconium dichloride  
150995-51-0, Rac-dimethylsilylenebis[2-methyl-4,5-  
benzoindenyl]zirconium dichloride 153882-67-8,  
Rac-dimethylsilylenebis[2-methyl-4-phenylindenyl]zirconium

dichloride 177794-75-1, Octahydrofluorenyltitanium trimethoxide  
183431-85-8, Rac-(1,2'-ethylene)(2,1'-ethylene)bis(3-methylindenyl)zirconium dichloride 192314-04-8,  
Rac-(1,2'-ethylene)(2,1'-ethylene)bis(indenyl) zirconium dichloride 203175-17-1 329015-04-5

(manuf. of polyolefin and polypropylene compns. by 2-step process involving specific catalysts and polyene for moldings)

IT 9002-88-4P, Polyethylene 9003-07-0P, Polypropylene 9003-70-7P, Divinylbenzene-styrene copolymer 9010-79-1P, Ethylene-propylene copolymer 9039-74-1P, Divinylbenzene-propylene copolymer 25085-53-4P, Isotactic polypropylene 26221-73-8P, Ethylene-1-octene copolymer 26522-58-7P, Dicyclopentadiene-propylene copolymer 28325-75-9P, Syndiotactic polystyrene 29564-28-1P, 1,7-Octadiene-propylene copolymer 96317-92-9P, 1,9-Decadiene-ethylene-propylene copolymer 112155-92-7P, 1,9-Decadiene-ethylene copolymer 120006-66-8P, 1,5-Hexadiene-propylene copolymer 130479-39-9P, 1,9-Decadiene-ethylene-1-octene copolymer 137635-25-7P, 1,9-Decadiene-propylene copolymer 149012-10-2P, Propylene-5-vinyl-2-norbornene copolymer 151784-10-0P 158575-35-0P, Norbornadiene-propylene copolymer 161740-56-3P 460095-22-1P 460095-23-2P

(manuf. of polyolefin and polypropylene compns. by 2-step process involving specific catalysts and polyene for moldings)

RE

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- (2) Esso Research And Engineering Co; DE 2332890 A 1974 HCPLUS
- (3) Esso Research And Engineering Co; JP 4942788 A 1974
- (4) Esso Research And Engineering Co; NL 7309032 A 1974 HCPLUS
- (5) Idemitsu Kosan Co Ltd; US 5670580 A 1995 HCPLUS
- (6) Idemitsu Kosan Co Ltd; EP 686649 A1 1995 HCPLUS
- (7) Idemitsu Kosan Co Ltd; WO 9419382 A1 1995 HCPLUS
- (8) Mitsubishi Chemical Corp; JP 892337 A 1996
- (9) Mitsubishi Chemical Corp; JP 09235337 A 1997 HCPLUS
- (10) Mitsui Toatsu Chemicals Inc; JP 62161810 A 1987 HCPLUS

L69 ANSWER 10 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 2002:615719 HCPLUS Full-text

DN 137:170379

TI Polyolefin graft resin compositions

IN Machida, Shuji; Sato, Kazuo

PA Idemitsu Petrochemical Co., Ltd., Japan

SO PCT Int. Appl., 69 pp.

CODEN: PIXXD2

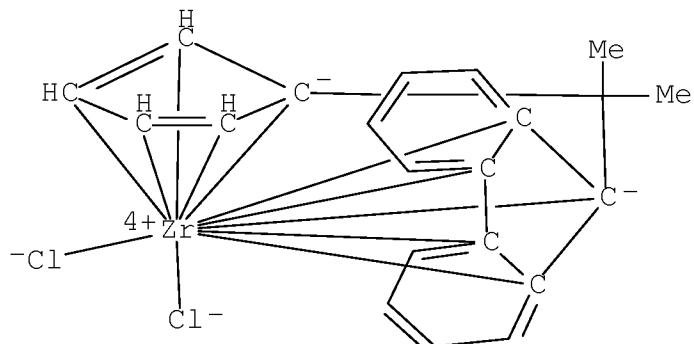
DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.		KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2002062889	A1	20020815	WO 2002-JP952	20020206
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	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	EP 1367093	A1	20031203	EP 2002-711323	20020206
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	EP 1367093	B1	20051214		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	JP 4237492	B2	20090311	JP 2002-563235	20020206
					<--
	US 20040072950	A1	20040415	US 2003-467298	20030807
					<--
	US 7193013	B2	20070320		
PRAI	JP 2001-30644	A	20010207	<--	
	WO 2002-JP952	W	20020206	<--	
AB	A polyolefin resin compn. comprises (A) a polyolefin obtained from at least one monomer selected among $\alpha$ -olefins, cycloolefins, and styrene and derivs. thereof, (B) a polyolefin which is obtained from at least one monomer and is different in compn. and properties from the polyolefin A, and (C) a graft copolymer obtained by bonding the polyolefin A to the polyolefin B through a polyene, wherein the ratio of the relaxation rate of a long-relaxing ingredient (1/R1) in the compn. as measured by solid 1H-NMR spectroscopy to the relaxation rate of a resin mixt. consisting of the ingredient (A) and the ingredient (B) only (1/R1)0, i.e., [(1/R1)/(1/R1)0], is 1.01 or higher and the compn. has an intrinsic viscosity $[\eta]$ (135° decalin) 0.1-10 dL/g. This resin compn. can be easily controlled with respect to factors which influence or develop morphol. or material properties such as interfacial strength. Thus, a composite material comprising polyolefin resins can be designed according to properties required.				
IT	130638-44-7 (polyolefin resin compn.)				
RN	130638-44-7 HCAPLUS				
CN	Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-				

methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(polyolefin resin compn.)

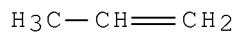
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-02

ICS C08L025-00; C08L045-00; C08L051-06

CC 37-6 (Plastics Manufacture and Processing)

IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
7631-86-9, P 10, uses 130638-44-7 153882-67-8  
177794-75-1, Octahydrofluorenyltitanium trimethoxide 332172-16-4  
(polyolefin resin compn.)

IT 9003-07-0, Polypropylene 25085-53-4, Isotactic  
polypropylene 26007-43-2, Ethylene-norbornene copolymer  
26063-22-9, Syndiotactic polypropylene 28325-75-9, Syndiotactic  
polystyrene  
(polyolefin resin compn.)

RE

(1) Basf Ag; JP 10316711 A 1998 HCPLUS

(2) Basf Ag; DE 19709667 A1 1998 HCPLUS

- (3) Basf Ag; EP 864593 A1 1998 HCAPLUS
- (4) Exxon Chemical Patents Inc; CA 2001462 A 1990 HCAPLUS
- (5) Exxon Chemical Patents Inc; JP 328209 A 1990
- (6) Exxon Chemical Patents Inc; EP 366411 A2 1990 HCAPLUS
- (7) Exxon Chemical Patents Inc; BR 8905506 A 1990 HCAPLUS
- (8) Exxon Chemical Patents Inc; AU 8943842 A 1990 HCAPLUS
- (9) Idemitsu Kosan Co Ltd; JP 05247147 A 1993 HCAPLUS
- (10) Idemitsu Kosan Co Ltd; JP 05320449 A 1993 HCAPLUS
- (11) Idemitsu Kosan Co Ltd; US 5362814 A 1993 HCAPLUS
- (12) Idemitsu Kosan Co Ltd; US 5418276 A 1993 HCAPLUS
- (13) Idemitsu Kosan Co Ltd; EP 559108 A1 1993 HCAPLUS
- (14) Showa Denko K K; JP 04288355 A 1992 HCAPLUS
- (15) Smith, J; US 5455300 A 1995 HCAPLUS
- (16) Smith, J; EP 697438 A1 1995 HCAPLUS
- (17) Smith, J; JP 859952 A 1995

L69 ANSWER 11 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:272838 HCAPLUS Full-text

DN 136:295217

TI Production of **polypropylene** using metallocene  
polymerization catalysts

IN Debras, Guy; Dupire, Marc; Michel, Jacques

PA ATOFINA Research SA, Belg.

SO Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1195391	A1	20020410	EP 2000-203442	200010 05
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R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
WO	2002028923	A1	20020411	WO 2001-EP11489	200110 03
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W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,

CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,  
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,  
TD, TG

AU 2002023589 A 20020415 AU 2002-23589  
200110  
03

EP 1322682 A1 20030702 EP 2001-986306  
200110  
03

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
CN 1468265 A 20040114 CN 2001-816950  
200110  
03

CN 1279070 C 20061011  
JP 2004510849 T 20040408 JP 2002-532504  
200110  
03

CN 1939940 A 20070404 CN 2006-10115501  
200110  
03

US 20040054100 A1 20040318 US 2003-398602  
200310  
14

PRAI EP 2000-203442 A 20001005 <--  
CN 2001-816950 A3 20011003 <--  
WO 2001-EP11489 W 20011003 <--

OS MARPAT 136:295217

AB A process for producing polypropylene, comprising homopolymerising propylene or copolymerising propylene with at least one comonomers selected from ethylene and C4-10 1-olefins in the presence of a metallocene catalyst system comprising (a) a metallocene catalyst R'(X<sub>m</sub>) (Cp'<sub>n</sub>)MQ<sub>2</sub>, wherein X = cyclopentadienyl moiety (Cp) or heteroatom, Cp' = substituted or unsubstituted fluorenyl ring; R = H or C1-20 hydrocarbyl in which 0 ≤ m ≤ 4; R' = C1-20 hydrocarbyl in which 0 ≤ n ≤ 8; R' = bridge which comprises a C1-20 alkylene radical, a dialkyl Ge or Si or siloxane, or an alkyl phosphine or amine radical, which bridge is substituted or unsubstituted, M is a Group IVB transition metal, V or a lanthanide metal and each Q = C1-20 hydrocarbyl or halogen, and (b) a cocatalyst which activates the catalyst component, the homo- or co- polymers being performed in a

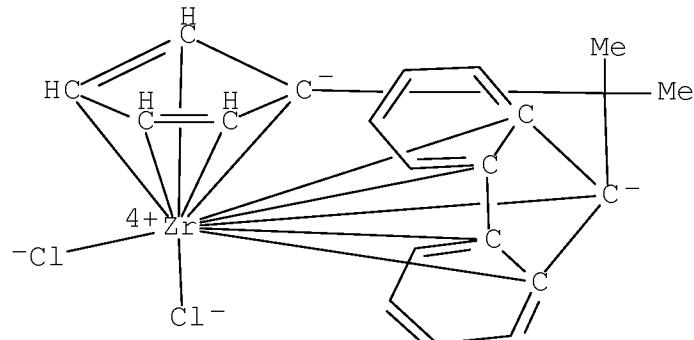
slurry process in a hydrocarbon diluent for the polypropylene or being performed in a soln. process in a hydrocarbon solvent for the polypropylene, the concn. of propylene monomer in the diluent or solvent being <70%, based on the wt. of the diluent or solvent, to produce a polypropylene homopolymer or copolymer having long chain branches on the polypropylene mols.

IT 130638-44-7 217176-68-6

(catalyst; prodn. of polypropylene using metallocene polymn. catalysts)

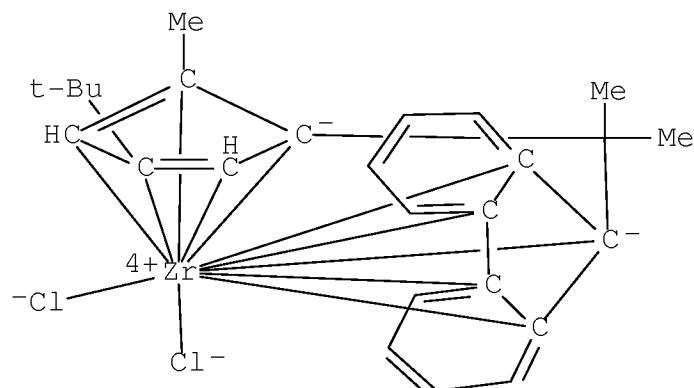
RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



RN 217176-68-6 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]- (9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(prodn. of polypropylene using metallocene polymn. catalysts)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
CMF C3 H6



IC ICM C08F110-06  
ICS C08F002-06; C08F002-14  
CC 35-3 (Chemistry of Synthetic High Polymers)  
IT 130638-44-7 217176-68-6  
(catalyst; prodn. of polypropylene using metallocene polymn.  
catalysts)  
IT 9003-07-0P, Polypropylene 25085-53-4P, Isotactic  
polypropylene 26063-22-9P, Syndiotactic polypropylene  
(prodn. of polypropylene using metallocene polymn. catalysts)  
RE  
(1) Borealis As; WO 9902540 A 1999 HCAPLUS  
(2) Chisso Corp; EP 0678527 A 1995 HCAPLUS  
(3) Dow Chemical Co; WO 9941289 A 1999 HCAPLUS  
(4) Exxon Chemical Patents Inc; WO 0012572 A 2000 HCAPLUS  
(5) Himont Inc; EP 0190889 A 1986 HCAPLUS  
(6) Pak-Wing, C; US 6060567 A 2000 HCAPLUS

L69 ANSWER 12 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1998:779821 HCAPLUS Full-text

DN 130:52816

TI Metallocene catalyst component and its use in producing isotactic polyolefins

IN Razavi, Abbas; Bellia, Vincenzo

PA Fina Research S.A., Belg.

SO Eur. Pat. Appl., 15 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.

KIND

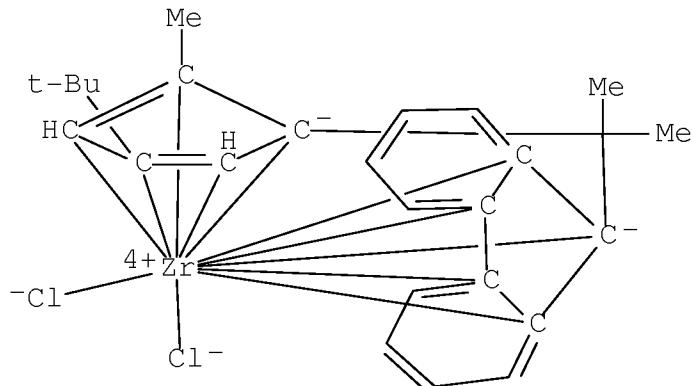
DATE

APPLICATION NO.

DATE

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PI EP 881236 A1 19981202 EP 1997-108467 199705  
26  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI  
WO 9854230 A1 19981203 WO 1998-EP3099 199805  
26  
W: JP, US  
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,  
NL, PT, SE  
EP 984989 A1 20000315 EP 1998-930732 199805  
26  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE,  
FI  
JP 2001526730 T 20011218 JP 1999-500228 199805  
26  
JP 4208097 B2 20090114  
EP 1283223 A2 20030212 EP 2002-78802 199805  
26  
EP 1283223 A3 20041222  
EP 1283223 B1 20080409  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE,  
FI  
AT 243717 T 20030715 AT 1998-930732 199805  
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PT 984989 T 20030930 PT 1998-930732 199805  
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ES 2202875 T3 20040401 ES 1998-930732 199805  
26  
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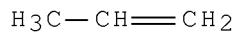
AT 391734 T 20080415 AT 2002-78802  
199805  
26  
ES 2302782 T3 20080801 ES 2002-78802  
199805  
26  
US 6559089 B1 20030506 US 2000-424416  
200002  
15  
PRAI EP 1997-108467 A 19970526 <--  
EP 1998-930732 A3 19980526 <--  
WO 1998-EP3099 W 19980526 <--  
OS MARPAT 130:52816  
AB A metallocene catalyst component for use in prep. isotactic polyolefins has the general formula  $R''(CpR1R2)(Cp'Rn')MQ2$ , where Cp is a substituted cyclopentadienyl ring; Cp' is a substituted or unsubstituted fluorenyl ring; R'' is a structural bridge imparting stereorigidity to the component; R1 is a substituent on the cyclopentadienyl ring which is distal to the bridge, which distal substituent comprises a bulky group of the formula  $XR33$  in which X is a Group IVA element and each R3 is H or C1-20 hydrocarbyl; R2 is a substituent on the cyclopentadienyl ring which is proximal to the bridge and positioned non-vicinal to the distal substituent and is of the formula  $YR43$  in which Y is a Group IVA element and each R4 is H or C1-7 hydrocarbyl; each R' is C1-20 hydrocarbyl;  $0 \leq n \leq 8$ ; M is a Group IVB transition metal or V; and each Q is C1-20 hydrocarbyl or halogen. Thus, reaction of methylcyclopentadiene with acetone gave a mixt. of 3,6,6- and 5,6,6-trimethylfulvene, which reacted with MeLi to give the tert-butylmethylcyclopentadiene isomers. Further reaction with acetone and then with fluorene gave a mixt. of 9-[1-(3-tert-butyl-2- and -5-methylcyclopentadienyl)-1-methylethyl]fluorene, which was treated with MeLi and ZrCl4 to give an easily sepd. mixt. of metallocene isomers. Polymn. of propylene in bulk or dild. with cyclohexane or isobutane at  $60^\circ$  with the metallocene in which the Me and tert-Bu substituents were non-vicinal, precontacted with Me aluminoxane, gave a homopolymer with >83% isotactic pentads, vs. 60-70% when the other metallocene isomer was used.  
IT 217176-68-6P  
(metallocene catalyst component for producing isotactic polyolefins)  
RN 217176-68-6 HCAPLUS  
CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
 (metallocene catalyst component for producing isotactic polyolefins)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
 CMF C3 H6



IC ICM C08F010-00  
 ICS C08F004-642  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 29  
 IT 217176-68-6P 217176-70-0P  
 (metallocene catalyst component for producing isotactic polyolefins)  
 IT 25085-53-4P, Isotactic polypropylene  
 (metallocene catalyst component for producing isotactic polyolefins)

RE

- (1) Danubia Petrochem Polymere; EP 0693497 A HCAPLUS
- (2) Ewen, J; US 5459117 A HCAPLUS
- (3) Fina Technology; EP 0537130 A HCAPLUS

(4) Fina Technology; EP 0747406 A HCPLUS

L69 ANSWER 13 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1997:254486 HCPLUS Full-text

DN 126:251478

OREF 126:48633a, 48636a

TI Effect of the structure of a zirconocene-based catalyst on the stereoregularity and properties of polypropylene

AU Meneghetti, Mario R.; Forte, Madalena C.; Dupont, Jairton

CS Inst. Quimica, UFRGS, Porto Alegre, 91501-970, Brazil

SO Polimeros: Ciencia e Tecnologia (1997), 7(1), 30-36

CODEN: PCTEFL; ISSN: 0104-1428

PB Associacao Brasileira de Polimeros

DT Journal

LA Portuguese

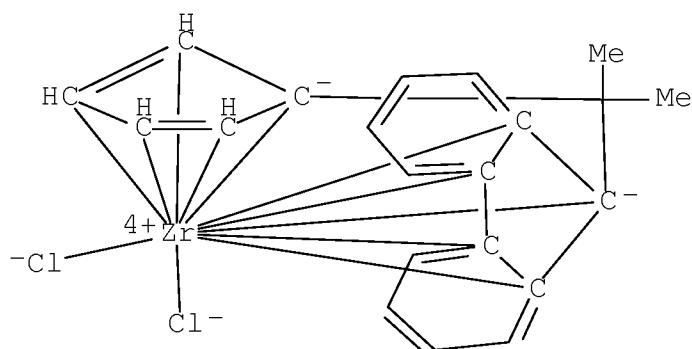
AB Metallocenes with different symmetry in combination with methylaluminoxane (MAO), were used as catalysts in site-specific polymn. of propylene at different temps. The metallocenes rac-ethylene-bis( $\eta$ 5-1-indenyl)zirconium dichloride, with C2 symmetry and isopropylidene-( $\eta$ 5-cyclopentadienyl) ( $\eta$ 5-9-fluorenyl)zirconium dichloride, with Cs symmetry, produce isotactic polypropylene and syndiotactic polypropylene resp. The degree of tacticity of these polymers decreases with the increase of polymn. temp. Only atactic polypropylene was formed when the unbridged zirconocenes bis( $\eta$ 5-cyclopentadienyl)zirconium dichloride and bis( $\eta$ 5-indenyl)zirconium dichloride were used, for all polymn. temps. The polymer micro-tacticity was verified by  $^{13}\text{C}$  NMR.

IT 130638-44-7

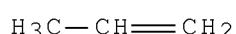
(role of group symmetry of zirconocene-based catalyst on tacticity and properties of polypropylene)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



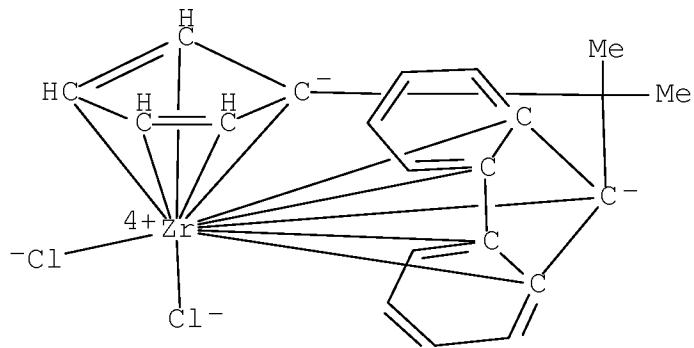
IT 25085-53-4P, Isotactic polypropylene  
(role of group symmetry of zirconocene-based catalyst on  
tacticity and properties of polypropylene)  
RN 25085-53-4 HCPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
CM 1  
CRN 115-07-1  
CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36, 67  
IT 1291-32-3, Bis( $\eta$ 5-cyclopentadienyl)zirconium dichloride  
12148-49-1, Bis(indenyl)zirconium dichloride 100080-82-8  
130638-44-7  
(role of group symmetry of zirconocene-based catalyst on  
tacticity and properties of polypropylene)  
IT 9003-07-0P, Atactic polypropylene 25085-53-4P, Isotactic  
polypropylene  
(role of group symmetry of zirconocene-based catalyst on  
tacticity and properties of polypropylene)

L69 ANSWER 14 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN  
AN 1997:48896 HCPLUS Full-text  
DN 126:60496  
OREF 126:11883a,11886a  
TI Producing an isotactic/syndiotactic polymer blend in a single  
reactor  
IN Reddy, Baireddy R.; Shamshoum, Edwar S.  
PA Fina Technology, Inc., USA  
SO Eur. Pat. Appl., 14 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 2  
PATENT NO. KIND DATE APPLICATION NO. DATE  
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PI EP 747403 A1 19961211 EP 1996-109109  
 199606  
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 EP 747403 B1 19990901  
 R: BE, DE, ES, FR, GB, IT, NL  
 US 5643846 A 19970701 US 1995-473680  
 199506  
 07  
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 JP 09100310 A 19970415 JP 1996-168291  
 199606  
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 ES 2137588 T3 19991216 ES 1996-109109  
 199606  
 07  
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 PRAI US 1995-473680 A 19950607 <--  
 US 1993-54916 A3 19930428 <--  
 OS MARPAT 126:60496  
 AB Using a combined catalyst system of  $\geq 1$  metallocene catalyst and  $\geq 1$  conventional supported Ziegler-Natta catalyst, the title blends are made. The metallocene catalyst comprises a bridged metallocene compd., e.g. cyclopentadiene and substituted cyclopentadiene, bound to Group IIIB, IVB, VB, or VIB metal, and an ionizing agent such as Me aluminoxane. The conventional supported Ziegler-Natta catalyst comprises an Al alkyl and a transition metal compd. with, optionally, an electron donor. Thus, propylene polymn. at  $60^\circ$  for 1 h in the presence of conventional supported Ziegler-Natta catalyst, cyclohexylmethyldimethoxysilane, AlEt<sub>3</sub> and isopropyl(fluorenyl)(cyclopentadienyl) zirconium dichloride/Me aluminoxane solid gave a product having polydispersity (bimodal distribution) 13.3.  
 IT 130638-44-7  
 (producing an isotactic/syndiotactic polymer blend in a single reactor)  
 RN 130638-44-7 HCPLUS  
 CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
 (producing an isotactic/syndiotactic polymer blend in a single reactor)

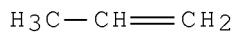
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F010-00  
 ICS C08F004-613

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

IT 75-24-1, Trimethylaluminum 97-93-8, Triethylaluminum, uses  
 100-99-2, Triisobutylaluminum, uses 1790-23-4,  
 Dichlorodipropoxytitanium 3112-67-2, Ethoxytrichlorotitanium  
 3712-48-9, Chlorotriethoxytitanium 3981-88-2 4200-76-4,  
 Chlorotributoxytitanium 6843-66-9, Diphenyldimethoxysilane  
 7550-45-0, Titanium tetrachloride, uses 7789-68-6, Titanium  
 tetrabromide 17865-32-6, Cyclohexylmethyldimethoxysilane  
 18395-30-7, Isobutyltrimethoxysilane 28319-17-7,  
 Dodecyloxytrichlorotitanium 56971-78-9, Dichlorodihexyloxytitanium  
 130638-44-7

(producing an isotactic/syndiotactic polymer blend in a single reactor)

IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,

Syndiotactic polypropylene

(producing an isotactic/syndiotactic polymer blend in a single reactor)

L69 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1996:569301 HCAPLUS Full-text

DN 125:198078

OREF 125:37061a,37064a

TI Stretched polypropylene films for electric capacitors

IN Sugimoto, Ryuichi; Yamada, Takayuki; Ishii, Yukio

PA Mitsui Toatsu Chemicals, Japan; Mitsui Chemicals Inc.

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08156118	A	19960618	JP 1994-299265	19941202

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JP 3618130 B2 20050209

PRAI JP 1994-299265 19941202 <--

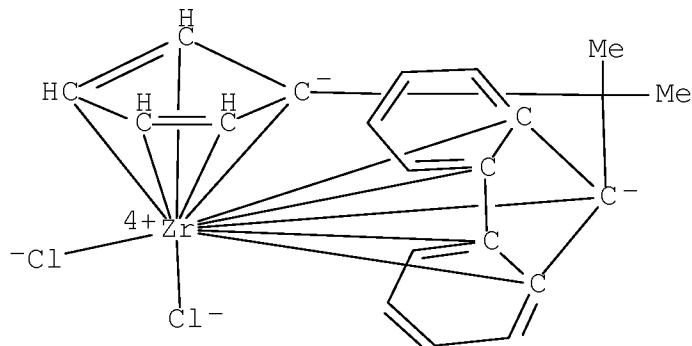
AB Title films are obtained. by monoaxially or biaxially stretching polypropylene showing isotactic or syndiotactic pentad fraction of boiling-heptane-sol. fraction  $\geq 0.5$  (detd. by  $^{13}\text{C-NMR}$ ). Thus, propylene was polymd. at 3 kg/cm<sup>2</sup>-G for 2 h in the presence of Me aluminoxane and dimethylsilylenebis(2-methyl-4-isopropylindenyl)zirconium dichloride to obtain polypropylene (isotactic pentad fraction 0.89), which was blended with BHT and Ca stearate, pelletized at  $\leq 230^\circ$ , molded into a sheet, and stretched 7-fold in the transverse direction to give a film showing haze 30.0 and dielec. loss tangent 0.001.

IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride

(catalysts, for polymn.; stereoregular polypropylene stretched films for elec. capacitors)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
 (stereoregular polypropylene stretched films for elec.  
 capacitors)

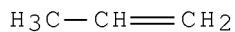
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM B29D007-00  
 ICS B29C055-02; C08J005-18; H01G004-18  
 ICI B29K023-00, B29L007-00, B29L031-34  
 CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 76  
 IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-  
 fluorenyl)zirconium dichloride 167254-77-5  
 (catalysts, for polymn.; stereoregular polypropylene stretched  
 films for elec. capacitors)  
 IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
 Syndiotactic polypropylene  
 (stereoregular polypropylene stretched films for elec.  
 capacitors)

L69 ANSWER 16 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1996:499420 HCAPLUS Full-text

DN 125:249167

OREF 125:46585a, 46588a

TI Engineering of new supermolecular structures defined by the chain architectures of polypropylenes and their blends

AU Kressler, Joerg; Thomann, Ralf; Muelhaupt, Rolf

CS Albert-Ludwigs-Univ. Freiburg, Germany

SO Annual Technical Conference - Society of Plastics Engineers (1996), 54th(Vol. 2), 2289-2293

CODEN: ACPED4; ISSN: 0272-5223

PB Society of Plastics Engineers

DT Journal

LA English

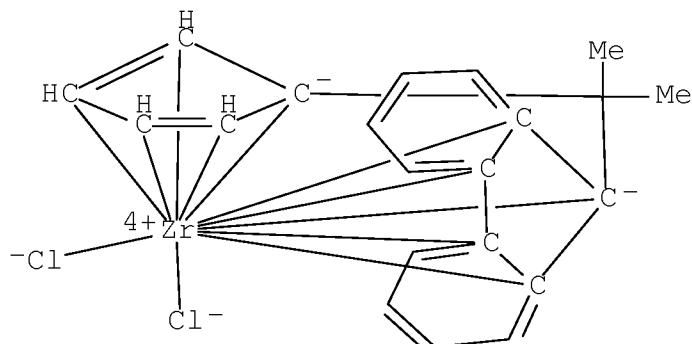
AB Based on metallocene catalysts it is possible to prep. high-mol. wt. samples of isotactic polypropylene (i-PP) which crystallize exclusively in their  $\gamma$ -modification. This is caused by regular defects in the tacticity and results in new supermol. structures studied by light and at. force microscopy. Also highly stereoregular syndiotactic polypropylene (s-PP) can be prep'd. using metallocene catalysts. The melt crystd. samples show different types of nonspherulitic supermol. structures. Both i-PP and s-PP phase sep. in the melt. This can be explained in terms of an equation-of-state theory. Furthermore, the modification of different polypropylenes with triblock copolymers, i.e., polystyrene-poly-1-butene-polystyrene, is discussed. Mech. properties are related to the morphol. development in the blends.

IT 130638-44-7

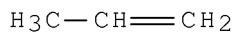
(catalyst; engineering of new polypropylene supermol. structures by varying chain architecture during synthesis with metallocene catalysts and by blending with each other or triblock copolymers)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(engineering of new polypropylene supermol. structures by varying  
chain architecture during synthesis with metallocene catalysts  
and by blending with each other or triblock copolymers)  
RN 25085-53-4 HCPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
CM 1  
CRN 115-07-1  
CMF C3 H6



CC 37-3 (Plastics Manufacture and Processing)  
IT 100163-29-9, Ethylenebis(4,5,6,7-tetrahydro-1-indenyl)zirconium  
dichloride 130638-44-7 161442-55-3  
(catalyst; engineering of new polypropylene supermol. structures  
by varying chain architecture during synthesis with metallocene  
catalysts and by blending with each other or triblock copolymers)  
IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
Syndiotactic polypropylene  
(engineering of new polypropylene supermol. structures by varying  
chain architecture during synthesis with metallocene catalysts  
and by blending with each other or triblock copolymers)

L69 ANSWER 17 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN  
AN 1995:675728 HCPLUS Full-text  
DN 123:286807  
OREF 123:51417a,51420a  
TI Syndiotactic polypropylene  
AU Shiomura, T.; Kohno, M.; Inoue, N.; Yokote, Y.; Akiyama, M.;  
Asanuma, T.; Sugimoto, R.; Kimura, S.; Abe, M.  
CS Central Research Institute, Mitsui Toatsu Chemicals, Inc., Yokohama,  
247, Japan  
SO Studies in Surface Science and Catalysis (1994),  
89(Catalyst Design for Tailor-Made Polyolefins), 327-38  
CODEN: SSCTDM; ISSN: 0167-2991  
PB Elsevier  
DT Journal  
LA English  
AB Large-scale prodn. of syndiotactic polypropylene (SPP) can be carried  
out using modified zirconocenes and trialkylalumininums with reduced

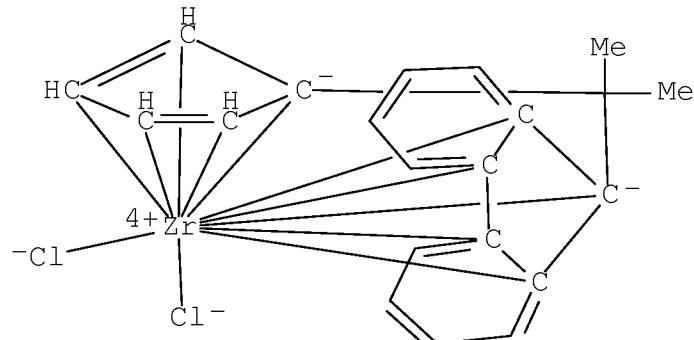
content of Me aluminoxane. Small modifications in the ligand structure gave unexpected effects in polymn. As was pointed by some authors, SPP was dogged by the difficulties in its processing due to its sluggish rate of crystn. Processing problems assocd. with a slow crystn. rate can be minimized without deterioration of the favorable features of SPP by blending with isotactic polypropylene.

IT 130638-44-7

(manuf. and crystn. behavior and processing of syndiotactic polypropylene in relation to)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene

(syndiotactic polypropylene blends; crystn. behavior and processability and properties of)

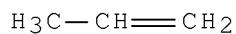
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)

IT 130638-44-7 132510-07-7 143319-72-6

(manuf. and crystn. behavior and processing of syndiotactic polypropylene in relation to)

IT 25085~53~4, Isotactic polypropylene  
(syndiotactic polypropylene blends; crystn. behavior and processability and properties of)

L69 ANSWER 18 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1994:246658 HCAPLUS Full-text

DN 120:246658

OREF 120:43727a, 43730a

TI Norbornene block copolymers as compatibilizers for polycycloolefin-polyolefin polymer blends

IN Epple, Ulrich; Brekner, Michael Joachim

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 35 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 566988	A1	19931027	EP 1993-106131	199304 15
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	EP 566988	B1	19960918		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	DE 4213219	A1	19931028	DE 1992-4213219	199204 22
				<--	
	AT 143041	T	19961015	AT 1993-106131	199304 15
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	ES 2094404	T3	19970116	ES 1993-106131	199304 15
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	US 5359001	A	19941025	US 1993-49980	199304 20
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	CA 2094558	A1	19931023	CA 1993-2094558	199304 21

ZA 9302789	A	19931116	ZA 1993-2789	<--
				199304
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JP 06041361	A	19940215	JP 1993-94513	<--
				199304
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RU 2072363	C1	19970127	RU 1993-4672	<--
				199304
				21
AU 9337124	A	19931028	AU 1993-37124	<--
				199304
				22

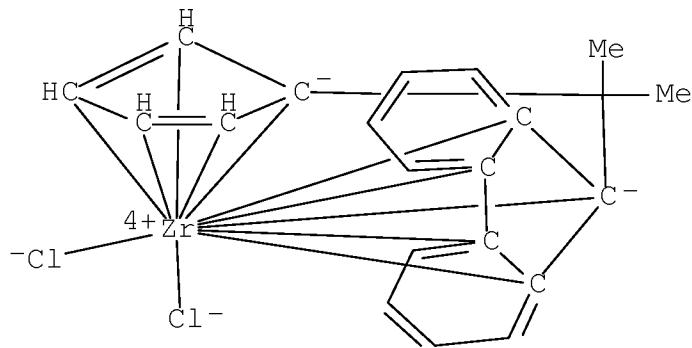
PRAI DE 1992-4213219      A      19920422      <--  
 DE 1992-4241001      A      19921205      <--

AB The title blends, useful for molded parts and as matrix polymers for composites, comprise  $\geq 1$  cycloolefin polymer and/or  $\geq 1$  polyolefin and, as a compatibilizer, a polyolefin block copolymer with norbornene, its homolog, or a related compd. of specified structure. Thus a blend contg. 45 parts of a 48:52 (mol.%) ethylene-norbornene copolymer [prepn. by using a Me aluminoxane-diphenylmethylene(9-fluorenyl)-cyclopentadienyl- zirconium dichloride catalyst given], 45 parts of high-d. polyethylene, and 10 parts of a block copolymer comprising ethylene-norbornene copolymer segment and a polyethylene segment [prepn. by using racemic dimethylsilylbis(1-indenyl)zirconium dichloride-Me aluminoxane and AlMe<sub>3</sub> catalysts given] had a single detectable Tg.

IT 130638-44-7  
 (catalyst contg. aluminoxane and, ethylene-norbornene copolymer prepn. in presence of)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
 (polycycloolefin blends, contg. norbornene block copolymers as compatibilizers)

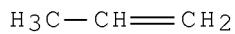
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L053-00  
 ICS C08L065-00; C08F232-00; C08F297-08  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 35  
 IT 130638-44-7 132510-07-7  
 (catalyst contg. aluminoxane and, ethylene-norbornene copolymer  
 prepn. in presence of)  
 IT 9002-88-4, Polyethylene 25085-53-4, Isotactic  
 polypropylene  
 (polycycloolefin blends, contg. norbornene block copolymers as  
 compatibilizers)

L69 ANSWER 19 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1993:192543 HCPLUS Full-text

DN 118:192543

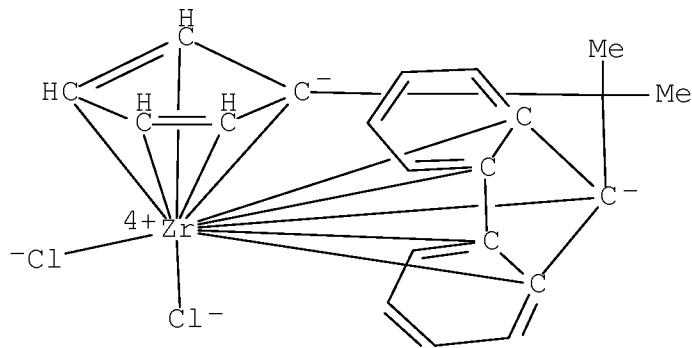
OREF 118:33093a, 33096a

TI Aminated olefin polymers with good adhesion properties and

compatibility in blends  
IN Tomita, Masayuki; Uchino, Hideshi; Sugano, Toshihiko; Fujita, Takashi; Aritomi, Mitsutoshi  
PA Mitsubishi Petrochemical Co., Ltd., Japan  
SO Eur. Pat. Appl., 12 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 511846	A1	19921104	EP 1992-303862	199204 29
	EP 511846	B1	19961002		<--
	EP 511846	B2	20020612		
	R: DE, FR, GB, IT, NL				
	JP 04328109	A	19921117	JP 1991-98821	199104 30
	JP 3176386	B2	20010618		<--
	US 5444125	A	19950822	US 1992-876037	
					199204 30

PRAI JP 1991-98821      A      19910430      <--  
OS MARPAT 118:192543  
AB The title polymers are prep'd. by amination of a terminal double bond of an isotactic or syndiotactic  $\alpha$ -olefin polymer prep'd. with a catalyst comprising a metallocene and an aluminoxane. Polypropene having a terminal double bond, prep'd. with Me aluminoxane and isopropylidene(cyclopentadienyl)(fluorenyl)zirconium dichloride as the catalyst, was aminated by reaction in turn with 9-BBN, NH4OH, and HOCl.  
IT 130638-44-7  
    (catalysts, for prepn. of polyolefins with vinyl end group)  
RN 130638-44-7 HCPLUS  
CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4DP, Isotactic polypropylene, vinyl-terminated  
(prepn. and amination of)

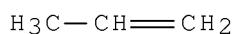
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F008-32

CC 35-8 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 37

IT 100080-82-8, Ethylenebis(indenyl)zirconium dichloride  
130638-44-7

(catalysts, for prepn. of polyolefins with vinyl end group)

IT 25085-53-4DP, Isotactic polypropylene, vinyl-terminated  
26063-22-9DP, Syndiotactic polypropylene, vinyl-terminated  
(prepn. and amination of)

L69 ANSWER 20 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1992:152458 HCPLUS Full-text

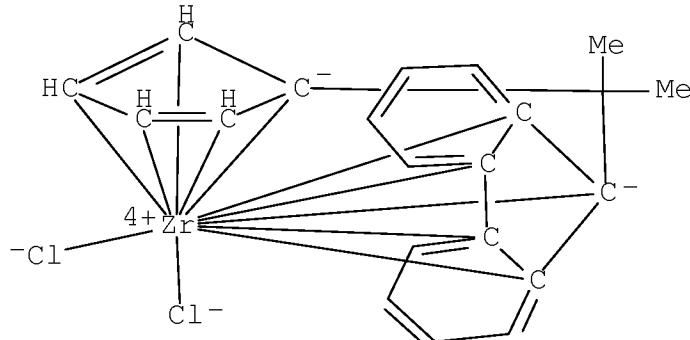
DN 116:152458

OREF 116:25833a, 25836a

TI Metallocene/polypropylene structural relationships:  
implications on polymerization and stereochemical control mechanisms

AU Ewen, John A.; Elder, M. J.; Jones, R. L.; Haspeslagh, Luc; Atwood,  
Jerry L.; Bott, Simon G.; Robinson, Kerry

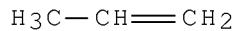
CS Fina Oil and Chem. Co., Deer Park, TX, 77536, USA  
 SO Makromolekulare Chemie, Macromolecular Symposia (1991),  
 48-49 (Eur. Polym. Fed. Symp. Polym. Mater., 3rd, 1990), 253-95  
 CODEN: MCMSES; ISSN: 0258-0322  
 DT Journal  
 LA English  
 AB Zr- and Hf-based metallocenes paired with either tetrakis(perfluorotetraphenyl)borate or methylaluminoxane are prep'd. and used as catalysts for polymn. of propylene (I). The microstructure and stereochem. of the resulting poly-I is examd. as a function of the structure and stereochem. of the polymn. catalyst. Based on polymer-catalyst stereochem. relations, mechanisms of polymn. are postulated.  
 IT 130638-44-7  
 (catalysts, contg. tetrakis(perfluorotetraphenyl)borate or methylaluminoxane, for polymn. of propylene, structure-mechanism relationships of)  
 RN 130638-44-7 HCAPLUS  
 CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
 (microstructure of, metallocene catalyst structure in relation to)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
 CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
IT 100080-82-8 130638-44-7 133190-48-4 139665-12-6  
139665-30-8 139665-31-9 139665-32-0 139665-33-1 139692-52-7  
(catalysts, contg. tetrakis(perfluorotetraphenyl)borate or  
methylaluminoxane, for polymn. of propylene, structure-mechanism  
relationships of)  
IT 9003-07-0, Atactic polypropylene 25085-53-4, Isotactic  
polypropylene 26063-22-9, Syndiotactic polypropylene  
(microstructure of, metallocene catalyst structure in relation  
to)

L69 ANSWER 21 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1992:42583 HCPLUS Full-text

DN 116:42583

OREF 116:7335a, 7338a

TI Alkenylsilane polymer and polypropylene resin composition

IN Asanuma, Tadashi; Kawanishi, Kaoru; Matsuzawa, Hiroshi; Nishimori,  
Yukari

PA Mitsui Toatsu Chemicals, Inc., Japan

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

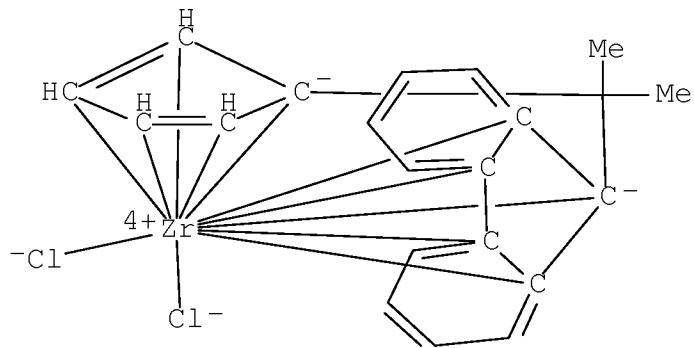
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 438710	A2	19910731	EP 1990-124077	199012 13
					<--
	EP 438710	A3	19920122		
	EP 438710	B1	19950524		
	R: BE, DE, ES, FR, GB, IT, NL				
	JP 03255112	A	19911114	JP 1990-336077	199011 30
					<--
	JP 2974404	B2	19991110		
	ES 2074518	T3	19950916	ES 1990-124077	199012

US 5225507	A	19930706	US 1990-628357	199012 17
<--				
CA 2033286	A1	19910629	CA 1990-2033286	199012 27
<--				
CA 2033286	C	19961008		
CN 1053071	A	19910717	CN 1990-110171	199012 28
<--				
PRAI JP 1989-338203	C	19970813		
JP 1990-12420	A	19891228	<--	
AB	An alkenylsilane (co)polymer (I) having substantially syndiotactic structure comprises units of $\text{CH}_2\text{CH}[(\text{CH}_2)_n\text{SiX}_3]$ ( $n = 0-10$ integer; X = same or different H, halogen, C1-20 hydrocarbyl) and units of $\text{CH}_2\text{CHR}$ ( $R = \text{H, C1-23 straight or branched alkyl}$ ); the latter repeating units are less in amt. or absent and the polymer intrinsic viscosity ( $\eta$ ) (tetralin, $135^\circ$ ) is $\geq 0.01$ . I is prep'd. by addn. polymn. using an aluminoxane/transition metal compd. catalyst at $-100^\circ$ to $200^\circ$ at a pressure from atm. to $10 \text{ kg/cm}^2$ . I can be used as a nucleating agent for cryst. polypropylene. Thus, trimethylallylsilane in PhMe was polymd. at $30^\circ$ in the presence of methylaluminoxane and isopropyl(cyclopentadienyl-1-fluorenyl)zirconium dichloride at $30^\circ$ to give homopolymer (II) with $\eta$ 0.23. Sep. syndiotactic polypropylene (III) (syndiotactic pentad 0.912; $\eta$ 1.24) was prep'd. from propylene using the same polymn. catalysts system at $30^\circ$ . To 99.9 parts III was added 0.1 part II. The m.p. of the compn. was $105^\circ$ . Press molding at $250^\circ$ to a 1-mm sheet showed flexural stiffness 6700 $\text{kg/cm}^2$ , tensile yield strength 265 $\text{kg/cm}^2$ , elongation 420% and Izod impact strength (notched; $23^\circ$ and $-10^\circ$ ) 14.6 and 2.8 $\text{kg-cm/cm}$ , resp., vs. 4800, 210, 680, 14.0 and 2.1, resp. for III alone.			
IT	130638-44-7 (catalyst contg., for polymn. of alkenylsilane and/or propylene)			
RN	130638-44-7 HCPLUS			
CN	Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)			



IT 25085-53-4, Isotactic polypropylene  
 (nucleating agent for, alkenylsilane (co)polymers as)

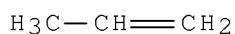
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F230-08

ICS C08L023-12

CC 37-6 (Plastics Manufacture and Processing)

IT 130638-44-7

(catalyst contg., for polymn. of alkenylsilane and/or propylene)

IT 25085-53-4, Isotactic polypropylene

(nucleating agent for, alkenylsilane (co)polymers as)

L69 ANSWER 22 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1992:21508 HCPLUS Full-text

DN 116:21508

OREF 116:3803a,3806a

TI Stereospecific polymerizations with metallocene catalysts: products and technological aspects

AU Antberg, M.; Dolle, V.; Haftka, S.; Rohrmann, J.; Spaleck, W.; Winter, A.; Zimmermann, H. J.

CS Hoechst A.-G., Frankfurt/Main, Germany

SO Makromolekulare Chemie, Macromolecular Symposia (1991),

48-49 (Eur. Polym. Fed. Symp. Polym. Mater., 3rd, 1990), 333-47  
CODEN: MCMSES; ISSN: 0258-0322

DT Journal

LA English

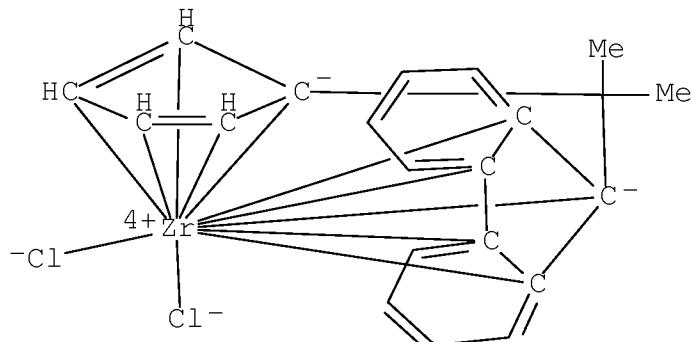
AB Morphol., mech. properties, and particle formation were compared for the polypropylenes prep'd. by stereospecific polymn. on isospecific or syndiospecific Hf- or Zr-contg. metallocenes and for the com. samples synthesized on a heterogeneous catalyst. The particle-forming process used for bulk polymn. might be a process of agglomeration and condensation induced by softening or even melting of the product. Polymer prep'd. with racemic dimethylsilylbis(2,4-dimethylcyclopentadienyl)zirconium dichloride as the catalyst showed only minor differences in comparison with Hostalen PPW 1780 S1.

IT 130638-44-7

(catalysts, for stereospecific polymn. of propylene)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(prep'n. of, catalysts for, hafnium- and zirconium-contg. metallocenes as)

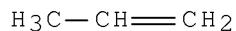
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 36  
 IT 100516-64-1 121009-93-6 124684-46-4 130638-44-7  
 (catalysts, for stereospecific polymn. of propylene)  
 IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
 Syndiotactic polypropylene  
 (prepn. of, catalysts for, hafnium- and zirconium-contg.  
 metallocenes as)

L69 ANSWER 23 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1991:472443 HCPLUS Full-text

DN 115:72443

OREF 115:12545a,12548a

TI Catalyst for producing hemiisotactic polypropylene

IN Ewen, John A.

PA Fina Technology, Inc., USA

SO Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 423101	A2	19910417	EP 1990-870177	199010 09
					<--
	EP 423101	A3	19910807		
	EP 423101	B1	20000126		
	EP 423101	B2	20060503		
				R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE	
	US 5036034	A	19910730	US 1989-419221	198910 10
					<--
	CA 2027124	A1	19910411	CA 1990-2027124	199010 09
					<--
	CA 2027124	C	20010904		
	EP 742227	A2	19961113	EP 1996-112193	

EP 742227	A3	19970122	199010 09
EP 742227	B1	20010314	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE			
AT 189226	T	20000215	AT 1990-870177
			199010 09
ES 2142303	T3	20000416	ES 1990-870177
			199010 09
AT 199722	T	20010315	AT 1996-112193
			199010 09
ES 2155909	T3	20010601	ES 1996-112193
			199010 09
CN 1051735	A	19910529	CN 1990-109215
			199010 10
CN 1028532	C	19950524	
KR 181495	B1	19990515	KR 1990-16066
			199010 10
JP 03193796	A	19910823	JP 1990-273136
			199010 11
CN 1100733	A	19950329	CN 1994-108568
			199408 16
CN 1058022	C	20001101	
US 6369175	B1	20020409	US 1996-663469
			199606 17
GR 3033307	T3	20000929	GR 2000-400990
			200004 25

GR 3036018

T3

20010928

GR 2001-400871

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200106  
13

&lt;--

PRAI US 1989-419221 A 19891010 <--  
 EP 1990-870177 A3 19901009 <--  
 US 1991-695139 B1 19910503 <--

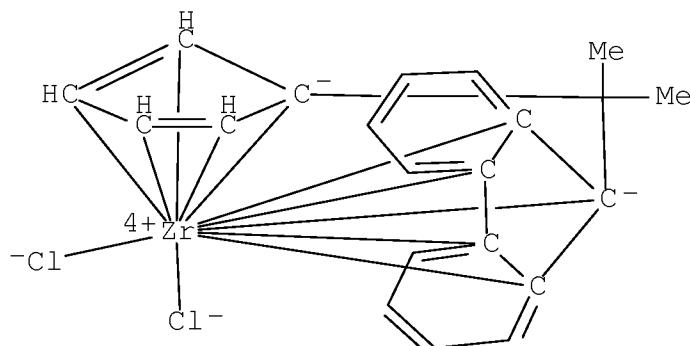
OS MARPAT 115:72443

AB Metallocenes  $R_2(ZRn)(ZRm)_2MX_2$  [M = Group IV metals; R<sub>1,2</sub> = C<sub>1-20</sub> hydrocarbyl; R<sub>2</sub> = structural bridge imparting stereorigidity to the compd., X = halogen; Z = (substituted) cyclopentadienyl; and m,n = 0-4; and ZRn is sterically different ring from ZRm resulting in asymmetry for the compds.] are used as polymn. catalysts to give polypropylene with hemiisotactic structure (isotactic structure on every other asym. C atom.). Thus, polymn. of 200 mL C<sub>3</sub>H<sub>6</sub> by a catalyst soln. contg. 1.4 mL methylaluminoxane and 5 mg isopropylidene(3-methylcyclopentadiene-1-fluorenyl)zirconium dichloride in 10-20 mL PhMe at 60° for 1 h gave a hemiisotactic polypropylene with polydispersity 1.9.

IT 130638-44-7

(catalysts, for prepn. of hemiisotactic polypropylene)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[η<sub>10</sub>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

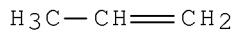
IT 25085-53-4

(plasticizer for, hemiisotactic polypropylene as)

RN 25085-53-4 HCPLUS

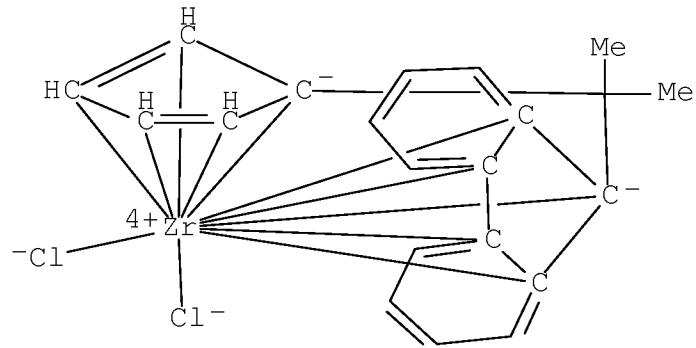
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CRN 115-07-1  
CMF C3 H6



IC ICM C07F017-00  
ICS C08F004-642; C08K005-00; C08L023-10  
CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 67  
IT 130638-44-7 133190-48-4  
(catalysts, for prepn. of hemiisotactic polypropylene)  
IT 25085-53-4 26063-22-9  
(plasticizer for, hemiisotactic polypropylene as)

L69 ANSWER 24 OF 24 HCPLUS COPYRIGHT 2009 ACS on STN  
AN 1991:450344 HCPLUS Full-text  
DN 115:50344  
OREF 115:8773a, 8776a  
TI Propylene polymerization by stereorigid metallocene catalysts: some  
new aspects of the metallocene structure/**polypropylene**  
microstructure correlation  
AU Antberg, M.; Dolle, V.; Klein, R.; Rohrmann, J.; Spaleck, W.;  
Winter, A.  
CS Hoechst A.-G., Frankfurt/Main, 6230/80, Germany  
SO Studies in Surface Science and Catalysis (1990), 56(Catal.  
Olefin Polym.), 501-15  
CODEN: SSCTDM; ISSN: 0167-2991  
DT Journal  
LA English  
AB The chirality of metallocenes for prepn. of highly isotactic  
polypropylene was a necessary but not sufficient condition. Certain  
conditions concerning special electronic factors and steric  
arrangements are required. Variations in metallocene structure  
retaining chirality can lead to reduced isospecificity. Decreasing  
stereospecificity was demonstrated on syndiospecific metallocene  
catalysts.  
IT 130638-44-7  
(catalysts, stereospecific, for polymn. of propylene, structure  
in relation to)  
RN 130638-44-7 HCPLUS  
CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-  
methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



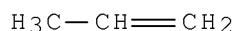
IT 25085-53-4P, Isotactic polypropylene  
 (prepn. of, in presence of stereospecific metallocene catalysts,  
 structure in relation to)

RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
 CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)

IT 100163-29-9, Ethylenebis(4,5,6,7-tetrahydro-1-indenyl) zirconium  
 dichloride 121009-93-6 128178-27-8 130638-44-7  
 133190-48-4 133518-40-8 133518-41-9 134876-98-5  
 (catalysts, stereospecific, for polymn. of propylene, structure  
 in relation to)

IT 25085-53-4P, Isotactic polypropylene  
 (prepn. of, in presence of stereospecific metallocene catalysts,  
 structure in relation to)

=> D L70 1-34 TI

L70 ANSWER 1 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN

TI An olefin polymerization process

L70 ANSWER 2 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Propene-norbornene copolymers: Synthesis and microstructure

L70 ANSWER 3 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Metallocene catalyst composition and process for preparing olefin polymers

L70 ANSWER 4 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Biscyclopentadienyl diene complex catalysts for polymerization of olefins

L70 ANSWER 5 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI The role of intermediate chain migration in propene polymerization using substituted {iPr(CpFlu)}<sub>2</sub>ZrCl<sub>2</sub>/MAO catalysts

L70 ANSWER 6 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Kinetics and mechanistic insight into propylene polymerization with different metallocenes and various aluminum alkyls as cocatalysts

L70 ANSWER 7 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Novel "naturally" compatible polyolefin alloys by single-site Ziegler catalysts

L70 ANSWER 8 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Group 4 Cs symmetric catalysts and 1-olefin polymerization

L70 ANSWER 9 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Catalyst system for producing isotactic/syndiotactic olefin polymer blends in a single reactor

L70 ANSWER 10 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Hydrophilic polyolefin fibers and their manufacture

L70 ANSWER 11 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Catalyst using halogenated metallocene for alpha-olefin polymerization

L70 ANSWER 12 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI New polyolefins by metallocene catalysts

L70 ANSWER 13 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Olefin polymerization using supported metallocene catalysts: development of high activity catalysts for use in slurry and gas phase ethylene polymerizations

L70 ANSWER 14 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Biconstituent core-sheath fibers for use as binders for bonding woven and nonwoven fabrics

L70 ANSWER 15 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI On the mechanism of stereospecific polymerization - development of a universal model to demonstrate the relationship between metallocene structure and polymer microstructure

L70 ANSWER 16 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Biscyclopentadienyl diene complex polymerization catalysts for unsaturated monomers

L70 ANSWER 17 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI doubly-conformationally locked, stereorigid catalysts for the preparation of tacticospecific polymers

L70 ANSWER 18 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Correlation between configuration/conformation of zirconocenes on the stereoselectivity of the propylene polymerization reaction

L70 ANSWER 19 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Method for producing  $\alpha$ -olefin polymers.

L70 ANSWER 20 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Polymerization of propene with highly isospecific  $\text{SiO}_2$ -supported zirconocene catalysts activated with common alkylaluminums

L70 ANSWER 21 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Gas phase polymerization reaction utilizing soluble unsupported catalysts

L70 ANSWER 22 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Olefin polymerization catalyst and olefin polymerization process

L70 ANSWER 23 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Polymerizing olefins in the presence of metallic catalysts

L70 ANSWER 24 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Olefin polymerization catalysts and their use in manufacture of polyolefins

L70 ANSWER 25 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN  
TI Catalysts containing metallocenes for preparation of polyolefins with high molecular weight

L70 ANSWER 26 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN

TI Catalysts for polymerization of olefins

L70 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Catalysts for polymerizing olefins with wide molecular weight distribution

L70 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Catalysts for polymerization of olefins

L70 ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Magnesium compound-supported polymerization catalysts for  $\alpha$ -olefins

L70 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Catalysts for polymerization of olefins

L70 ANSWER 31 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Ziegler-Natta catalysis. A theoretical study of the isotactic polymerization of propylene

L70 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Catalysts for polymerization of olefins

L70 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Stereospecific polymerization of propylene in the presence of homogeneous catalysts: ligand-monomer enantioselective interactions

L70 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Process and catalysts for producing large symmetrical polyolefin particles

=> D L70 5,10,15,20,25,30,34 BIB ABS HITSTR HITIND RE

L70 ANSWER 5 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2000:104572 HCAPLUS Full-text

DN 132:237429

TI The role of intermediate chain migration in propene polymerization using substituted {iPr(CpFlu)}ZrCl<sub>2</sub>/MAO catalysts

AU Angermund, Klaus; Fink, Gerhard; Jensen, Vidar R.; Kleinschmidt, Ralph

CS Max-Planck-Institut Kohlenforschung, Mulheim an der Ruhr, D-45470, Germany

SO Macromolecular Rapid Communications (2000), 21(2), 91-97

CODEN: MRCOE3; ISSN: 1022-1336

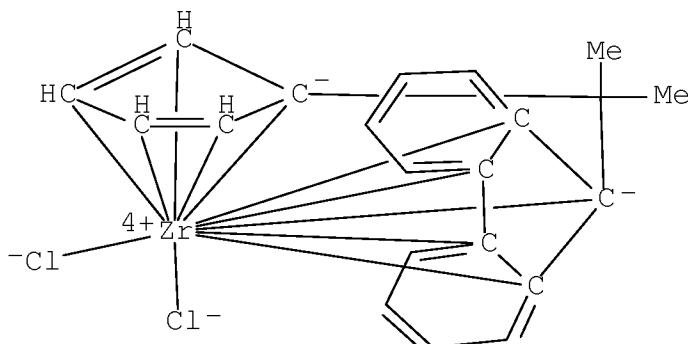
PB Wiley-VCH Verlag GmbH

DT Journal  
LA English  
AB Comparison of pentad distributions obtained from NMR spectra and from a mol. mechanics-based modeling approach is performed for the catalysts {iPr(3-X-Cp)(Flu)}ZrCl<sub>2</sub> (X = H, Me, Et, iPr, tBu) at a range of different temps. In order to model the temp. dependency of the pentad distributions the variation in steric influence along with the change of the rotational energy level for catalysts with substituents displaying relatively low barriers to rotation is treated approx. by calcg. energy profiles of 360° rotation of the alkyl groups. The temp. at which intermediate chain migration (back-skip) or chain epimerization start to be important seem to be rather const. (30–50°) among the 5 catalysts. Even in the case of X = tBu, back-skip seems to be unimportant for explaining the formation of isotactic polymer at room temp.

IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride  
(intermediate chain migration and transition states in propene polymn. using isopropylidene(alkyl-cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)

RN 130638-44-7 HCPLUS

CN Zirconium, dichloro[η<sub>10</sub>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

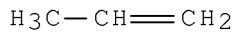


IT 25085-53-4P, Isotactic polypropylene  
(intermediate chain migration and transition states in propene polymn. using isopropylidene(alkyl-cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)

RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CRN 115-07-1  
CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 29

IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride 133190-48-4 146961-02-6  
146997-14-0 148821-61-8 162260-01-7 262298-63-5 262298-64-6  
(intermediate chain migration and transition states in propene  
polymn. using isopropylidene(alkyl-  
cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)

IT 25085-53-4P, Isotactic polypropylene  
(intermediate chain migration and transition states in propene  
polymn. using isopropylidene(alkyl-  
cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)

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L70 ANSWER 10 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1998:315008 HCAPLUS Full-text

DN 129:42315

OREF 129:8869a,8872a

TI Hydrophilic polyolefin fibers and their manufacture

IN Sanbuichi, Masahito; Makiyama, Muneto

PA Kanegafuchi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 10130947	A	19980519	JP 1996-289750	199610

31

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PRAI JP 1996-289750

19961031 <--

AB Syndiotactic propylene polymer fibers, polyolefin blend fibers contg. ≥30% syndiotactic propylene polymers, or core-sheath fibers of polyolefin core and sheath of syndiotactic propylene polymers or polyolefins contg. ≥30% syndiotactic propylene polymers are oxidized to introduce O-contg. functional groups on the fiber surface. The oxidn. method is selected from electron beam irradn.,  $\gamma$ -ray irradn., UV irradn., photon method, flame method, corona discharge, and glow discharge and is carried out by the use of ≥1 gas selected from air, O, N, CO, CO<sub>2</sub>, He, Ar, S oxides, and N oxides. Thus, a nonwoven fabric made of syndiotactic polypropylene [pentad fraction 0.78; prep'd. by the use of isopropyl(cyclopentadienyl-1-fluorenyl)zirconium dichloride, Et<sub>3</sub>Al, and tris(pentafluorophenyl)boron] fiber was treated with corona discharge to show good H<sub>2</sub>O absorption without deterioration of its strength.

IT 25085-53-4, Isotactic polypropylene  
(fiber; oxidn. of syndiotactic polypropylene-based fibers for hydrophilicity without deterioration of strength)

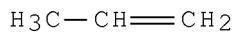
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

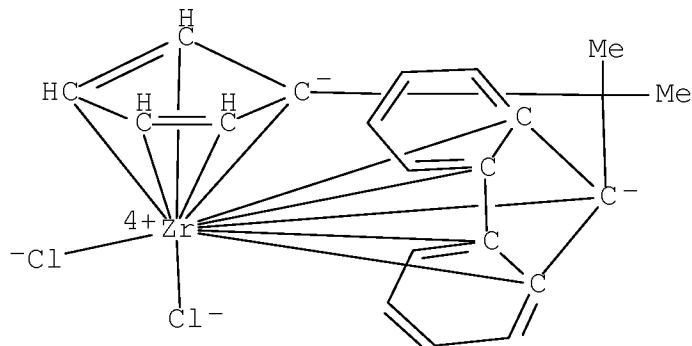
CMF C3 H6



IT 130638-44-7P, Isopropyl(cyclopentadienyl-1-fluorenyl)zirconium dichloride  
(polymn. catalyst; oxidn. of syndiotactic polypropylene-based fibers for hydrophilicity without deterioration of strength)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IC ICM D01F006-06  
 ICS D01F006-46; D01F008-06; D06M010-00; D06M011-52; D06M013-256  
 CC 40-10 (Textiles and Fibers)  
 Section cross-reference(s): 35, 67  
 IT 9002-88-4 25085-53-4, Isotactic polypropylene  
     (fiber; oxidn. of syndiotactic polypropylene-based fibers for  
     hydrophilicity without deterioration of strength)  
 IT 130638-44-7P, Isopropyl(cyclopentadienyl-1-  
     fluorenyl)zirconium dichloride  
     (polymn. catalyst; oxidn. of syndiotactic polypropylene-based  
     fibers for hydrophilicity without deterioration of strength)

L70 ANSWER 15 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1997:325208 HCAPLUS Full-text

DN 126:343902

OREF 126:66887a,66890a

TI On the mechanism of stereospecific polymerization - development of a universal model to demonstrate the relationship between metallocene structure and polymer microstructure

AU van der Leek, Y.; Angermund, K.; Reffke, M.; Kleinschmidt, R.; Goretzki, R.; Fink, G.

CS Max-Planck-Inst. fur Kohlenforschung, Mulheim an der Ruhr, D-45470, Germany

SO Chemistry--A European Journal (1997), 3(4), 585-591  
 CODEN: CEUJED; ISSN: 0947-6539

PB VCH

DT Journal

LA English

AB In this paper it is demonstrated that the simple rule of thumb that C<sub>2</sub>-sym. catalysts produce isotactic and C<sub>s</sub>-sym. catalysts syndiotactic polypropylene is too narrow. The introduction of one Me group at the Cp ring in the [{iPr(CpFlu)}ZrCl<sub>2</sub>]/MAO system (Flu = fluorenyl, MAO = methylalumoxane) reduces the C<sub>s</sub> symmetry to C<sub>1</sub>, and

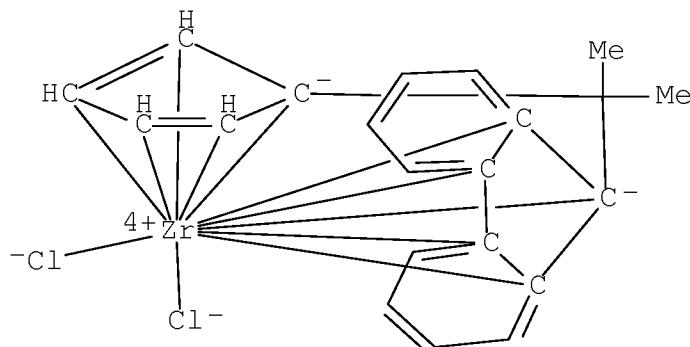
the resulting catalyst produces hemiisotactic polypropylene. The analogous catalyst with a bulkier tert-Bu group on the Cp ring gives isotactic polypropylene. When the C2 symmetry of  $[\{\text{Me}_2\text{Si}(\text{Ind})_2\}\text{ZrCl}_2]$  (Ind = indenyl) is reduced to C1, a metallocene can be obtained that produces atactic polypropylene. The authors have broken away from the symmetry-based model and developed a universal model, which accurately describes the exptl. microstructures of the polymers by considering the four lowest-energy conformers of the metallocene species coordinating to prochiral propene (Rre, Sre, Ssi, and Rsi) and the positional changes that the polymer chain undergoes during insertion. The relative energy levels of the four diastereomers can be detd. by mol. modeling calcns.; these energy gradations, in particular the size of the energy gaps, are decisive in detg. the stereospecificity. Also, the model permits the stereoerrors to be classified and explained. Through this model the stereosequence of a polymer chain can be calcd. and predicted.

IT 130638-44-7

(development of universal model to demonstrate relationship between metallocene structure and polymer microstructure)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(development of universal model to demonstrate relationship between metallocene structure and polymer microstructure)

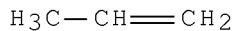
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

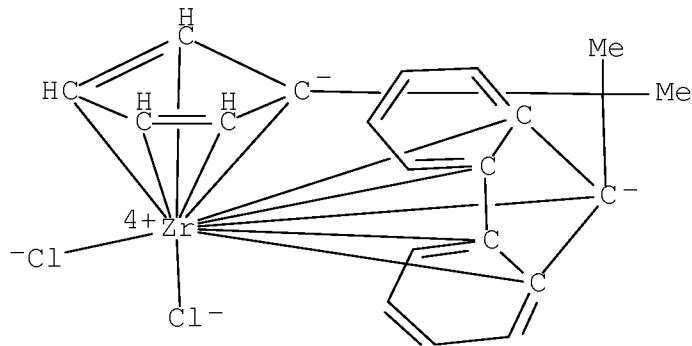


CC 35-3 (Chemistry of Synthetic High Polymers)  
IT 130638-44-7 133190-48-4 146961-02-6 146997-14-0  
(development of universal model to demonstrate relationship  
between metallocene structure and polymer microstructure)  
IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
Syndiotactic polypropylene  
(development of universal model to demonstrate relationship  
between metallocene structure and polymer microstructure)

RE

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AN 1994:631457 HCPLUS Full-text  
 DN 121:231457  
 OREF 121:42227a,42230a  
 TI Polymerization of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with common alkylaluminums  
 AU Soga, Kazuo; Kim, Hyun Joon; Shiono, Takeshi  
 CS Research Laboratory Resources Utilization, Tokyo Inst. Technology, Yokohama, 227, Japan  
 SO Macromolecular Chemistry and Physics (1994), 195(10), 3347-60  
 CODEN: MCHPES; ISSN: 1022-1352  
 DT Journal  
 LA English  
 AB Several types of SiO<sub>2</sub>-supported metallocene catalysts were prepd. using chem. modified silica gel. Polymn. of propene(I) was conducted with these catalysts combined with methylaluminoxane (MAO) or ordinary alkylaluminums. Highly isotactic polypropylene with high mol. wt. was obtained by the catalysts whose zirconocene ligands were chem. immobilized on SiO<sub>2</sub>. The preparative methods of these catalysts and the results of I polymn., together with the anal. data of produced polymers, are reported in some detail.  
 IT 130638-44-7  
 (polymn. of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with methylaluminoxane or alkylaluminums)  
 RN 130638-44-7 HCPLUS  
 CN Zirconium, dichloro[η<sub>10</sub>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic Polypropylene  
 (polymn. of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with methylaluminoxane or

alkylaluminums)

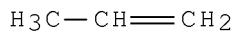
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)

IT 7631-86-9, Silica, uses 112243-78-4 112243-79-5 119821-97-5  
**130638-44-7**

(polymn. of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with methylaluminoxane or alkylaluminums)

IT 9003-07-0P, Polypropylene 25085-53-4P, Isotactic Polypropylene

(polymn. of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with methylaluminoxane or alkylaluminums)

L70 ANSWER 25 OF 34 HCPLUS COPYRIGHT 2009 ACS on STN

AN 1993:671955 HCPLUS Full-text

DN 119:271955

OREF 119:48697a

TI Catalysts containing metallocenes for preparation of polyolefins with high molecular weight

IN Kaminsky, Walter; Renner, Florian

PA Hoechst A.-G., Germany

SO Ger. Offen., 8 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI DE 4121368	A1	19930107	DE 1991-4121368
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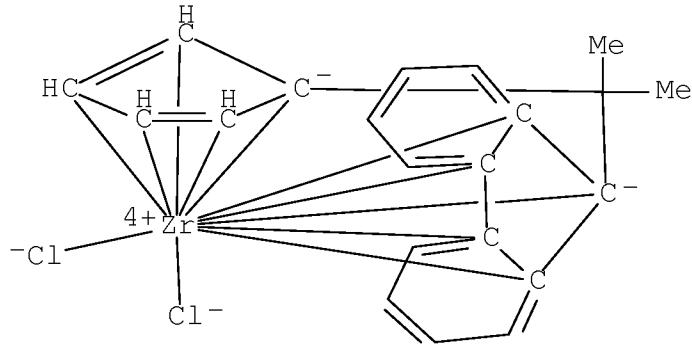
199106

28

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EP 523416	A2	19930120	EP 1992-110698	
				199206
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EP 523416	A3	19930217		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
AT 185819	T	19991115	AT 1992-110698	
				199206
				25
			<--	
ES 2138961	T3	20000201	ES 1992-110698	
				199206
				25
			<--	
CA 2072490	A1	19921229	CA 1992-2072490	
				199206
				26
			<--	
AU 9218576	A	19930107	AU 1992-18576	
				199206
				26
			<--	
AU 653029	B2	19940915		
ZA 9204751	A	19930224	ZA 1992-4751	
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				26
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JP 05331230	A	19931214	JP 1992-169487	
				199206
				26
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GR 3031728	T3	20000229	GR 1999-402822	
				199911
				03
			<--	
PRAI DE 1991-4121368	A	19910628	<--	
OS MARPAT 119:271955				
AB Polymn. catalysts comprising aluminoxanes and supported metallocenes, e.g., ethylenebis(1-indenyl)zirconium dichloride (I) or ethylenebis(tetrahydro-1-indenyl)zirconium dichloride, are useful for the prepn. of polyolefins having high mol. wt., m.p., and stereoregularity and narrow mol. wt. distribution. An aluminoxane and silica-supported I were used for the polymn. of propene, giving polypropene having mol. wt. 958,000 and m.p. 160.1°.				
IT 130638-44-7				
			(catalysts, for polymn. of olefins)	
RN 130638-44-7			HCAPLUS	

CN Zirconium, dichloro[η<sub>10</sub>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropene  
(prepn. of, with high mol. wt., catalysts for)

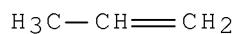
RN 25085-53-4 HCPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F004-02  
ICS C08F004-80; C08F004-76; C08F004-622; C08F004-642; C08F004-68;  
C08F004-58; C08F010-06

CC 35-3 (Chemistry of Synthetic High Polymers)

IT 100080-82-8 100163-29-9 121009-93-6 126642-97-5  
130638-44-7 132510-07-7 132530-06-4 134041-32-0  
150500-58-6

(catalysts, for polymn. of olefins)

IT 9002-88-4P, Polyethylene 9003-07-0P, Polypropene  
25085-53-4P, Isotactic polypropene  
(prepn. of, with high mol. wt., catalysts for)

AN 1992:427417 HCAPLUS Full-text  
 DN 117:27417  
 OREF 117:4979a,4982a  
 TI Catalysts for polymerization of olefins  
 IN Dolle, Volker; Herrmann, Hans Friedrich; Winter, Andreas; Spaleck, Walter  
 PA Hoechst A.-G., Germany  
 SO Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 480390	A2	19920415	EP 1991-117170	199110 09
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	EP 480390	A3	19921119		
	EP 480390	B1	19970716		
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ZA	9108075	A	19920624	ZA 1991-8075	199110 09
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JP	04264110	A	19920918	JP 1991-262260	199110 09
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ES	2106754	T3	19971116	ES 1991-117170	199110 09
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CA	2053199	A1	19920412	CA 1991-2053199	199110 10
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AU	9185783	A	19920416	AU 1991-85783	

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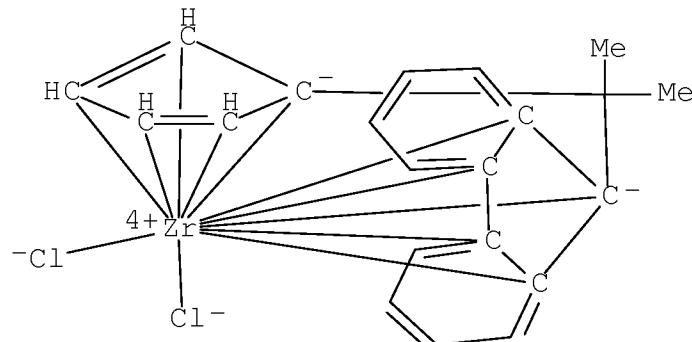
AU 650676 B2 19940630  
 PRAI DE 1990-4032266 A 19901011 <--

AB Polyolefins with high tacticity and mol. wt. and narrow mol. wt. distribution are prepd. by polymn. in the presence of catalysts contg. alkyl aluminoxanes (d.p. 2-50) and metallocenes. Stirring 10 dm<sup>3</sup> liq. C<sub>3</sub>H<sub>6</sub>, 35 mL 10:90 iso-Bu Me aluminoxane (d.p. 30), and 3.8 mg [(dimethylsilylene)diindenyl]zirconium dichloride at 70° for 60 min gave polypropylene with catalyst activity 400 kg/g metallocene-h, wt.-av. mol. wt. 52,000, polydispersity 2.1, and isotactic index 92%.

IT 130638-44-7  
 (catalysts, for polymn. of olefins)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
 (manuf. of, catalysts for)

RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C<sub>3</sub> H<sub>6</sub>



IC ICM C08F010-00  
 ICS C08F004-602  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 67  
 IT 112243-78-4 119821-97-5 124684-46-4 130638-44-7  
 131855-48-6 135454-23-8 135910-63-3 136019-48-2  
 (catalysts, for polymn. of olefins)  
 IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
 Syndiotactic polypropylene 106565-43-9P, Ethylene-propylene block  
 copolymer  
 (manuf. of, catalysts for)  
  
 L70 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 1990:441535 HCAPLUS Full-text  
 DN 113:41535  
 OREF 113:7077a, 7080a  
 TI Process and catalysts for producing large symmetrical polyolefin  
 particles  
 IN Ewen, John A.  
 PA Fina Technology, Inc., USA  
 SO Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 354893	A2	19900214	EP 1989-870121	198907 31
				<--	
	EP 354893	A3	19911106		
	EP 354893	B1	19941102		
	EP 354893	B2	20020313		
	R: BE, DE, FR, GB, IT, NL				
	CA 1339589	C	19971216	CA 1989-610252	198909 05
				<--	
	JP 03140305	A	19910614	JP 1989-272787	198910 21
				<--	
PRAI US 1988-229361	A	19880805	<--		

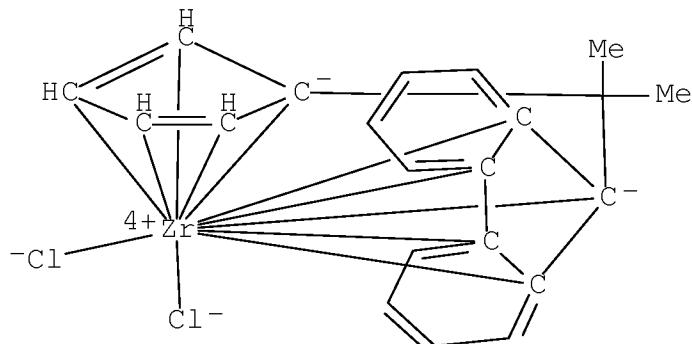
OS MARPAT 113:41535

AB The title particles, with high bulk d., are prep'd. by prepolymerg. olefins in the presence of pptd. complexes of org. Al compds. and Group IVB, VB, or VIB metallocenes at temps. below the polymn. temp. of the olefin followed by polymg. the olefin under polymn. conditions. This process obviates the pelleting step ordinarily used to give polymers with better handling properties. Manuf. of polypropylene particles is exemplified.

IT 130638-44-7  
 (catalysts, for polymn. of olefins to large particles)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[η<sub>10</sub>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



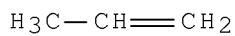
IT 25085-53-4P, Isotactic polypropylene  
 (manuf. of large particles with high bulk d., catalysts for)

RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
 CMF C3 H6



IC ICM C08F004-649  
 ICS C08F010-00

CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 67  
IT 96363-63-2 112243-78-4 119821-97-5 128214-24-4  
**130638-44-7**  
(catalysts, for polymn. of olefins to large particles)  
IT 9003-07-0P, Polypropylene 25085-53-4P, Isotactic  
polypropylene 26063-22-9P, Syndiotactic polypropylene  
(manuf. of large particles with high bulk d., catalysts for)